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U.S. Competition with China and Russia: The Crisis-Driven Need to Change U.S. Strategy

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U.S. Competition with China and Russia: The Crisis-Driven Need to Change U.S. Strategy

Anthony H. Cordesman with the assistance of Grace Hwang

> "Victorious warriors win first and then go to war, while defeated warriors go to war first and then seek to win…The greatest victory is that which requires no battle…To win one hundred victories in one hundred battles is not the acme of skill. To subdue the enemy without fighting is the acme of skill." — Sun Tzu, The Art of War

The new National Security Strategy (NSS) that the White House issued on December 18, 2017, called for the United States to focus on competition with China and Russia in order to focus on the potential military threat they posed to the United States.[1] The strategy identified terrorism, extremism, and rogue regimes like Iran and North Korea as serious threats, but it placed primary emphasis on the *civil* and *military* threats from China and Russia: [2]

> Three main sets of challengers—the revisionist powers of China and Russia, the rogue states of Iran and North Korea, and transnational threat organizations, particularly jihadist terrorist groups—are actively competing against the United States and our allies and partners. Although differing in nature and magnitude, these rivals compete across political, economic, and military arenas, and use technology and information to accelerate these contests in order to shift regional balances of power in their favor. These are fundamentally political contests between those who favor repressive systems and those who favor free societies.
>
> China and Russia want to shape a world antithetical to U.S. values and interests. China seeks to displace the United States in the Indo-Pacific region, expand the reaches of its state-driven economic model, and reorder the region in its favor. Russia seeks to restore its great power status and establish spheres of influence near its borders. The intentions of both nations are not necessarily fixed. The United States stands ready to cooperate across areas of mutual interest with both countries.
>
> For decades, U.S. policy was rooted in the belief that support for China's rise and for its integration into the post-war international order would liberalize China. Contrary to our hopes, China expanded its power at the expense of the sovereignty of others. China gathers and exploits data on an unrivaled scale and spreads features of its authoritarian system, including corruption and the use of surveillance. It is building the most capable and well-funded military in the world, after our own. Its nuclear arsenal is growing and diversifying. Part of China's military modernization and economic expansion is due to its access to the U.S. innovation economy, including America's world-class universities.
>
> Russia aims to weaken U.S. influence in the world and divide us from our allies and partners. Russia views the North Atlantic Treaty Organization (NATO) and European Union (EU) as threats. Russia is investing in new military capabilities, including nuclear systems that remain the most significant existential threat to the United States, and in destabilizing cyber capabilities. Through modernized forms of subversive tactics, Russia interferes in the domestic political affairs of countries around the world. The combination of Russian ambition and growing military capabilities creates an unstable frontier in Eurasia, where the risk of conflict due to Russian miscalculation is growing destabilizing cyber capabilities. Through modernized forms of subversive tactics, Russia interferes in the domestic political affairs of countries around the world. The combination of Russian ambition and growing military capabilities creates an unstable frontier in Eurasia, where the risk of conflict due to Russian miscalculation is growing.
>
> … Every year, competitors such as China steal U.S. intellectual property valued at hundreds of billions of dollars. Stealing proprietary technology and early-stage ideas allows competitors to unfairly tap into the innovation of free societies. Over the years, rivals have used sophisticated means to weaken our businesses and our economy as facets of cyber-enabled economic warfare and other malicious activities. In addition to these illegal means, some actors use largely legitimate, legal transfers and relationships to gain access to fields, experts, and trusted foundries that fill their capability gaps and erode America's long-term competitive advantages.

> We must defend our National Security Innovation Base (NSIB) against competitors. The NSIB is the American network of knowledge, capabilities, and people—including academia, National Laboratories, and the private sector—that turns ideas into innovations, transforms discoveries into successful commercial products and companies, and protects and enhances the American way of life. The genius of creative Americans, and the free system that enables them, is critical to American security and prosperity.
>
> …Today, the United States must compete for positive relationships around the world. China and Russia target their investments in the developing world to expand influence and gain competitive advantages against the United States. China is investing billions of dollars in infrastructure across the globe. Russia, too, projects its influence economically, through the control of key energy and other infrastructure throughout parts of Europe and Central Asia. The United States provides an alternative to state-directed investments, which often leave developing countries worse off. The United States pursues economic ties not only for market access but also to create enduring relationships to advance common political and security interests.

Roughly a month later, the Department of Defense released an unclassified summary of a new National Defense Strategy of the United States that emphasized the same themes:[3]

> China is a strategic competitor using predatory economics to intimidate its neighbors while militarizing features in the South China Sea. Russia has violated the borders of nearby nations and pursues veto power over the economic, diplomatic, and security decisions of its neighbors. As well, North Korea's outlaw actions and reckless rhetoric continue despite United Nation's censure and sanctions. Iran continues to sow violence and remains the most significant challenge to Middle East stability. Despite the defeat of ISIS's physical caliphate, threats to stability remain as terrorist groups with long reach continue to murder the innocent and threaten peace more broadly.
>
> …The central challenge to U.S. prosperity and security is the *reemergence of long-term, strategic competition* by what the National Security Strategy classifies as revisionist powers. It is increasingly clear that China and Russia want to shape a world consistent with their authoritarian model – gaining veto authority over/other nations' economic, diplomatic, and security decisions.
>
> …China is leveraging military modernization, influence operations, and predatory economics to coerce neighboring countries to reorder the Indo-Pacific region to their advantage. As China continues its economic and military ascendance, asserting power through an all-of-nation, long-term strategy, it will continue to pursue a military modernization program that seeks Indo-Pacific regional hegemony in the near-term and displacement of the United States to achieve global preeminence in the future. The far-reaching objective of this defense strategy is to set the military relationship between our two countries on a path of transparency and non-aggression.
>
> Concurrently, Russia seeks veto authority over nations on its periphery in terms of their governmental, economic, and diplomatic decisions, to shatter the North Atlantic Treaty Organization and change European and Middle East security and economic structures to its favor. The use of emerging eastern technologies to discredit and subvert democratic processes in Georgia, Crimea, and eastern Ukraine is concern enough, but when coupled with its expanding and modernizing nuclear arsenal the challenge is clear.
>
> Long-term strategic competitions with China and Russia are the principal priorities for the Department, and require both increased and sustained investment, because of the magnitude of the threats they pose to U.S. security and prosperity today, and the potential for those threats to increase in the future. Concurrently, the Department will sustain its efforts to deter and counter rogue regimes such as North Korea and Iran, defeat terrorist threats to the United States, and consolidate our gains in Iraq and Afghanistan while moving to a more resource-sustainable approach.
>
> Deterring or defeating long-term strategic competitors is a fundamentally different challenge than the regional adversaries that were the focus of previous strategies. Our strength and integrated actions with allies will demonstrate our commitment to deterring aggression, but our dynamic force employment, military posture, and operations must introduce unpredictability to adversary decision-makers. With our allies and partners, we will challenge competitors by maneuvering them into unfavorable positions, frustrating their efforts, precluding their options while expanding our own, and forcing them to confront conflict under adverse conditions.

Enduring coalitions and long-term security partnerships, underpinned by our bedrock alliances and reinforced by our allies' own webs of security relationships, remain a priority:

- *Expand Indo-Pacific alliances and partnerships*. A free and open Indo-Pacific region provides prosperity and security for all. We will strengthen our alliances and partnerships in the Indo-Pacific to a networked security architecture capable of deterring aggression, maintaining stability, and ensuring free access to common domains. With key countries in the region, we will bring together bilateral and multilateral security relationships to preserve the free and open international system.
- *Fortify the Trans-Atlantic NATO Alliance.* A strong and free Europe, bound by shared principles of democracy, national sovereignty, and commitment to Article 5 of the North Atlantic Treaty is vital to our security. The alliance will deter Russian adventurism, defeat terrorists who seek to murder innocents, and address the arc of instability building on NATO's periphery. At the same time, NATO must adapt to remain relevant and fit for our time—in purpose, capability, and responsive decision-making. We expect European allies to fulfill their commitments to increase defense and modernization spending to bolster the alliance in the face of our shared security concerns.

Deterring "Worst Case" and Nuclear Wars Is a Key Mission, But Is Not the Central Focus of Long-Term Competition

These calls to address the civil challenges from China and Russia and to look beyond the U.S. military emphasis on counterterrorism that had emerged in 2001 were all too valid. However, the efforts to implement the new strategies have since focused too narrowly on the military dimension and on providing each U.S. military service with forces that are needed to fight "worst case" wars at higher theater levels or defend against nuclear strikes.

The U.S. has continued to focus on its wars in Afghanistan and against ISIS in Iraq and Syria. It has been slow to meet the civil challenges posed by China and Russia and to address their focus on using non-military or "gray zone" threats by carrying out low-level and indirect military operations in the form of hybrid warfare.

Accordingly, the U.S. has not properly addressed the fact that much or most of U.S. military competition with China and Russia will take the form of this gray area, hybrid warfare, and Chinese and Russian low-level military operations in order to influence other nations, to maximize opportunities from conflicts, and to gain strategic leverage. These are forms of military competition which involve far less risk of escalation and ones where China and Russia can pick their targets on a global and regional basis, limit their intervention (often to a spoiler role), and achieve gains at minimum cost and exposure.

The U.S. cannot ignore the need to deter major wars with China or Russia – particularly wars that escalate to the use of nuclear weapons. The United States must be able to fight them if it is left no choice. At the same time, real as such threats can be, they involve levels of conflict that can end in doing so much damage to both sides that these threats become the equivalent of "mutual assured destruction" (MAD).

China and Russia have leaders that fully understand that the only winner in a major nuclear conflict would be a power that could actually find a way to stand aside from a major nuclear exchange – or a high level of conventional theater warfare – between the other two. To quote a passage from the movie *War Games,* "the only way to win is not to play."

Giving Priority to Military Competition in Gray Area, Hybrid Warfare, and Lower Levels of Conflict

More broadly, the U.S. has not addressed many of the key challenges posed by the other ways China and Russia actually execute their long-term strategic competition. It was not until July 2020 that the U.S. gave high priority to the civil and economic challenges the U.S. faced from China, and it still did not address such challenges from Russia. It has not addressed the fact that China and Russia also compete on a broad range of other civil levels with the United States or that this competition is equally – or even more – serious as military competition.

The U.S. still needs to reshape its strategy for competing with China and Russia to properly address the fact that they have found ways to compete effectively using civil, gray area, and hybrid operations which rely on non-military political and economic competition alongside mixes of more limited forms of military "warfare."

Focusing on the Military Threat from Gray Area, Hybrid Warfare, and Low-Level and Indirect Military Operations

This analysis is a working document that analyzes such Chinese and Russian gray area, hybrid warfare, and low-level and indirect military operations. It is supplemented by two working chronologies of Chinese and Russian operations, which support this study. One is entitled ***Chronology of Possible Chinese Gray Area and Hybrid Warfare Operations*** and is available on the CSIS website here. The second is entitled ***Chronology of Possible Russian Gray Area and Hybrid Warfare Operations*** and is available here.

These chronologies show that China and Russia's focus on lower-level military operations and on civil competition had a critical impact on their long-term strategic competition with the United States, even before the Coronavirus created today's massive uncertainties in global economics and also made understanding these aspects of Chinese and Russian competition even more critical.

The main report and chronologies illustrate the complexity of these Chinese and Russian operations over the last two decades. These analyses show both Chinese and Russian civil-military character and their efforts to limit the use of their own national forces by instead exploiting those of other countries and non-state actors. These documents also provide a range of partial cases that warn that the global impact of the Coronavirus and the resulting economic and political crises in country after country will offer many new opportunities for China and Russia to challenge the U.S. and exploit the civil dimension and third country conflicts.

Even in those cases where some form of actual combat is involved, it is likely to be a limited part of a broader focus on winning without actual major warfare – China and Russia pursue the strategies advanced by Sun Tzu in *The Art of War* – while the present U.S. strategy focuses on classic forms of conflict war as defined by Clausewitz in the earlier chapters of *On War*.

Recognizing that Civil Competition Is of Equal or Greater Importance than Military Competition

At the same time, this analysis focuses on the importance of civil competition – issues that senior U.S. officials began to address in depth in June and July 2020. China and Russia have not only benefited from the fact that the U.S. has not focused properly on civil, gray area, and hybrid warfare forms of competition, but they have benefited from having state-driven systems that allow them to shape their economies to serve their strategic objectives, just as much as their military forces. While there are many areas where China and Russia do not directly compete with the

United States, there are many other cases where their strategy for such competition now applies to ongoing civil and military competition on a global level.

China and Russia have already recognized these needs and are now competing with the United States at the civil level with "gray area" tactics. At the same time, they utilize indirect uses of force in low intensity military operations involving third countries and non-state actors to deter or help fight higher levels of conflict. Where possible, China and Russia use their military power in what might be called "wars of influence" and in ways that do not involve actual fighting. When they do use force, it generally takes the form of limited or demonstrative uses of their own forces; covert operations; or the support from forces of other states, non-state actors, or factions.

If the United States is to deal effectively with such competition, then the U.S. must refocus its military strategy and forces to give gray area and hybrid conflicts at least the same or even more priority as it does to higher levels of warfare. Above all, the United States needs to refocus its national security strategy to address the impact of Chinese and Russian civil competition at a global, regional, and national level by fully integrating its military strategy and operations with its political and economic strategy operations.

The need to deal with civil challenges has become even more important because of the Coronavirus crisis. It is still far from clear how much the Coronavirus crisis will affect the relative competitiveness of the United States versus China and Russia. All three countries have suffered a major shock. The U.S. has reached unemployment levels equal to those of the Great Depression, and it has already spent more than $3 trillion dollars in an effort to ease the economic strain on its people and to help prepare for recovery. It will certainly face problems in both maintaining its planned levels of national security spending while meeting its new economic needs.

The Coronavirus challenge does affect China and Russia as well the United States. China too has suffered a major blow in terms of employment, trade, and economic growth – although the data available prove to be uncertain – and the same is true of Russia. Both China and Russia have the potential advantage to use their state-driven systems and enable their leaders to directly allocate resources and to keep funding competition in ways that may demand more sacrifices from their peoples. Both are almost certain to keep competing with the United States and to continue seeking and exploiting any new opportunities in other states that are facing political and economic crises.

At the same time, conflicts between lesser powers, civil wars, and extremism are creating new windows of opportunity for China and Russia throughout the world, which make it easier to exploit sustained areas of local and regional competition. North and South Korea, Iran and the Arab Gulf, India and Pakistan are long-standing examples. Syria, Turkey, and Libya are more recent cases that illustrate how exploiting new and unpredictable opportunities shaped by outside events can have a major impact on U.S., Chinese, and Russian civil and military action that may or may not fit prior models or any formal definition of warfare.

This makes it even more important that the U.S. refocus its efforts to compete. It means that the integration of the military and civil aspects of competition must occur at a wide range of levels. *Whether one calls it "warfare" or competition, the true meaning of "joint" and "multi-domain" has now become the need to integrate military and civil operations in every major region where the U.S. competes with China and Russia and in every relevant aspect of politics, technology, and trade.*

The U.S. must focus the combined use of military forces, economic resources, and political tools to maintain deterrence, shape its strategic influence, and control war fighting. In practice, this also means that the U.S. will deal with strategic partners, other countries, and non-state actors by treating them to be just as important as dealing with China and Russia.

The U.S. must also shape its approach to great power competition to fully recognize that it cannot afford to focus solely on China and Russia. They already compete by creating ongoing mixes of political, economic, and national security competition that actively involve other states and non-state actors. In many cases, the center of such competition is indirect and driven as much by information warfare as by any form of physical action. In other cases, it focuses more on the civil dimension than on the military one – by using "multi-domain" operations at the civil level and exploiting civil technology in hybrid and asymmetric ways.

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I. The Broader Structure of U.S. Strategic Competition with China and Russia

> "If your enemy is secure at all points, be prepared for him. If he is in superior strength, evade him. If your opponent is temperamental, seek to irritate him. Pretend to be weak, that he may grow arrogant. If he is taking his ease, give him no rest. If his forces are united, separate them. If sovereign and subject are in accord, put division between them. Attack him where he is unprepared, appear where you are not expected." ― Sun Tzu, The Art of War

There is a natural tendency in national security to focus on the military dimension while limiting the attention given to civil challenges only to the extent of domestic politics, trade, or international finance. Organizations, including combatant commands and government agencies, focus solely on their area of expertise.

The present U.S. focus on large-scale war fighting against China and Russia is also partly the heritage of both American engagements in the two World Wars and a reaction to the massive nuclear and theater warfare threats that emerged during the Cold War from 1947 to 1991. At the same time, it has been shaped by frustrations from engaging in two long wars that were driven by counterterrorism and extremism since 9/11.

It is not surprising, therefore, that the rise of China and the return of a Russian threat since 1991 have led the United States to return to a Cold War-like focus on major wars with an emphasis on nuclear forces in order to prepare for levels of theater conflict that could escalate to mutual assured destruction (MAD). These are areas where the U.S. has seen its past lead erode, where both China and Russia continue to make improvements in their forces, and where history warns that nations repeatedly miscalculate and escalate to the self-destructive levels of conflict regardless of the risk.

Preparing for major wars, however, is only one military aspect of the ongoing Chinese and Russian competition with the United States. In fact, the failure to deter a general war would likely end in the equivalent of massive damage and to the de facto defeat of all the powers engaged. China and Russia understand this, and their competition focuses on a civil basis or at lower levels of gray area and hybrid operations, which involve far less risk and make a real strategic victory possible.

Unlike Nazi Germany, Imperial Japan, and the former Soviet Union, China and Russia recognize that even an escalation to a major regional conflict is likely to be more costly to all the parties involved than its gains are worth. Occasional bursts of rhetoric aside, there is no ideological imperative to drive China or Russia to take such risks.

Having a more authoritarian government – with central authority over the military and every aspect of domestic security – that can exploit the civil economic sector and operate outside the norms which limit the United States also offers China and Russia an important advantage. The United States is facing opponents with very different levels of state control, public accountability, and economic systems from the U.S. – including the ability to use force with far less regards to the rule of law.

One of the key reasons why the U.S. has been slow to react to these realities is because the United States does not have such a state-driven political system and economy. The U.S. relies on democratic competition between political factions, free-enterprise economics, and the priorities set by blocs of voters. It sees military power largely in terms of deterrence and defense, as well as the ability to react to outside military threats.

As a result, the United States largely separates national security strategy into political, military, and economic compartments. U.S. politics have focused on topical domestic issues, and it rarely addresses long-term civil strategy beyond a broad support for democratic systems and values.

The U.S. may regularly issue strategy documents, but its diplomacy has normally been driven by short-term needs and crises, and it has rarely focused on long-term strategies to enhance U.S. power abroad. The U.S. economy is regulated but also driven by private businesses and investment. The U.S. government does not control or have the capability to directly manipulate key parts of the economy, and it especially does not seek to exploit that control to directly influence or defeat other states.

When it comes to the military dimension, the American political system often leads U.S. military planning to be driven by immediate or near-term term military priorities. At the same time, the comparative isolation of American defense planning from its civil politics and economic sector has led to a focus on using U.S. power to deter or "win" worst-case wars.

Broadening the Definition of Gray Area, Hybrid, and Irregular Operations

This does not mean that U.S. strategists have not addressed such issues, and there is a surprising amount of theory that attempts to precisely define the different aspects of U.S., Chinese, and Russian civil-military competition and conflict. This has led to many debates over exactly how to define terms like "Gray Area," "Hybrid," and "Irregular Warfare." In some ways, such debates are just as counterproductive as trying to separate the military and civil dimension of Chinese and Russian competition.

The fact remains that there is no way to precisely define the differences between such operations, and a focus on creating a taxonomy which assumes that such rules exist is counterproductive. The history of war is at least as much the history of irrational decisions, unpredictable attacks, and escalation as it is the result of the dictates from a prewar strategy. Today, this risk of irrational behavior is being steadily increased by major changes in great power relationships, the individual civil and military actions of great powers and lesser states, as well as the major shifts in military technology that have unpredictable real-world impacts.

Moreover, global competition means that most of the competition between the three great powers actually takes place in other countries. The United States and China – and to a lesser extent the United States and Russia – are involved in a constant process of both civil and military competition on a global basis where they may not use their own forces at all – or use them in very limited ways – and where economic competition may be more critical over time than military competition.

These broad streams of competition do not fit a narrow focus on the United States, China, and Russia – and they do not preclude many areas of cooperation and compromise between the competing powers. In many cases, specific areas of competition are shaped by opportunism and a process of action and interaction that will never fit any given attempt at military taxonomy or efforts to develop a clear doctrine.

Nevertheless, these theories deserve attention. Irregular warfare operations first garnered recent popular attention when Frank G. Hoffman labeled it as "hybrid war" in his 2007 *Conflict in the 21st Century*. He has since then revised his definition in 2009 to describe "hybrid warfare" as:[4]

> Any adversary that simultaneously and adaptively employs a fused mix of conventional weapons, irregular tactics, terrorism and criminal behavior in the battle space to obtain their political objectives.

Hybrid warfare is also interchangeably used with the term "gray zone operations," which Hoffman defines as,[5]

> Those covert or illegal activities of non-traditional statecraft that are below the threshold of armed organized violence; including disruption of order, political subversion of government or non-governmental organizations, psychological operations, abuse of legal processes, and financial corruption as part of an integrated design to achieve strategic advantage.

In 2013, the Chief of the General Staff of the Russian Federation's Armed Forces, General Valery Gerasimov, gave a speech that was recognized by many U.S. academics for defining the Russian understanding of irregular warfare known as "non-linear warfare," which is when,[6]

> Wars are no longer declared, and having begun, proceed according to an unfamiliar template…the role of non-military means of achieving political and strategic goals has grown, and in many cases, they have exceeded the power of force of weapons in their effectiveness. The focus of applied methods of conflict has altered in the direction of the broad use of political, economic, informational, humanitarian, and other non-military measures – applied in coordination with the protest potential of the population. All this is supplemented by military means of a concealed character, including carrying out actions of informational conflict and the actions of special operations forces.

It is important to note, however, that Gerasimov's article has been incorrectly labeled as the "Gerasimov doctrine," and the Russian understanding of "non-linear warfare" has been recognized by many scholars and strategists to be a mirror image of Russia's perception of U.S. activities in the irregular warfare domain.

In 1999, the Russian Major-General Vladimir Slipchenko believed that "sixth generation warfare" – or "no contact warfare" – would result in the next evolution of warfare that would become distant warfare that did not require contact.[7] The transition to "sixth generation warfare" calls for technological advancement to ensure strategic leverage with limited conventional forces in a contemporary world that uses nuclear weapons.

Also in 1999, two Chinese military analysts released a Chinese version of irregular warfare operations and labeled it as "unrestricted warfare." Colonel Qiao Liang and Colonel Wang Xiangsui describe unrestricted warfare as,[8]

> … a war that surpasses all boundaries and restrictions. It takes nonmilitary forms and military forms and creates a war on many fronts. It is the war of the future.

The Chinese use of "unrestricted warfare" has been further analyzed and sometimes referred to as "quasi warfare," which is marked by the "three non-warfares: non-contact (*fei jierong*), non-linear (*fei xianshi*), and non-symmetric (*fei duicheng*)."[9]

Non-contact (*fei jierong*) is warfare conducted in which the more advanced side is outside the immediate geographical zone of the enemy's weapons, and therefore impervious to strikes while also retaining the ability to conduct its own direct strikes on the enemy. Non-linear (*fei xianshi*) is warfare that has no distinguishable battlefield due to the advancement of technology and codependent nature of the relationship between the sides – and it is usually carried out over the information space. Non-symmetric (*fei duicheng*) is warfare that engages the adversary in every strategic aspect with the use of limited military resources.

The U.S. commands and the Department of Defense (DoD) have also formally acquired their own term of "multi-domain operations" (MDO), which the 2017 Report released by the U.S. Army Training and Doctrine Command defined as,[10]

> Multi-Domain Battle is an operational concept with strategic and tactical implications. It deliberately focuses on increasingly capable adversaries who challenge deterrence and pose strategic risk to U.S. interests in two ways. First, in operations below armed conflict, these adversaries employ systems to achieve their strategic ends over time to avoid war and the traditional operating methods of the Joint Force. Second, if these adversaries choose to wage a military campaign, they employ integrated systems that contest and separate Joint Force capabilities simultaneously in all domains at extended ranges to make a friendly response prohibitively risky or irrelevant.

The U.S. Army Training and Doctrine Command later released a revised version in 2018, shown in **Chart One**, which outlines the following:[11]

- **Central idea.** Army forces, as an element of the Joint Force, conduct Multi-Domain Operations to prevail in competition; when necessary, Army forces penetrate and dis-integrate enemy anti-access and area denial systems and exploit the resultant freedom of maneuver to achieve strategic objectives (win) and force a return to competition on favorable terms.
- **Tenets of the Multi-Domain Operations.** The Army solves the problems presented by Chinese and Russian operations in competition and conflict by applying three interrelated tenets: calibrated force posture, multi-domain formations, and convergence. Calibrated force posture is the combination of position and the ability to maneuver across strategic distances. Multi-domain formations possess the capacity, capability, and endurance necessary to operate across multiple domains in contested spaces against a near-peer adversary. Convergence is rapid and continuous integration of capabilities in all domains, the EMS, and information environment that optimizes effects to overmatch the enemy through cross-domain synergy and multiple forms of attack all enabled by mission command and disciplined initiative. The three tenets of the solution are mutually reinforcing and common to all Multi-Domain Operations, though how they are realized will vary by echelon and depend upon the specific operational situation.
- **Multi-Domain Operations and strategic objectives.** The Joint Force must defeat adversaries and achieve strategic objectives in competition, armed conflict, and in a return to competition. In competition, the Joint Force expands the competitive space through active engagement to counter coercion, unconventional warfare, and information warfare directed against partners. These actions simultaneously deter escalation, defeat attempts by adversaries to "win without fighting," and set conditions for a rapid transition to armed conflict. In armed conflict, the Joint Force defeats aggression by optimizing effects from across multiple domains at decisive spaces to penetrate the enemy's strategic and operational anti-access and area denial systems, dis-integrate the components of the enemy's military system, and exploit freedom of maneuver necessary to achieve strategic and operational objectives that create conditions favorable to a political outcome. In the return to competition, the Joint Force consolidates gains and deters further conflict to allow the regeneration of forces and the re-establishment of a regional security order aligned with U.S. strategic objectives.

Multi-domain Warfare and Multi-domain Operations

In this study, terms like "gray zone," "hybrid," and "irregular" are used to describe many forms of hegemonic competition and many operations that do not involve any form of combat. For the purposes of this analysis, these terms can refer to any range of action from non-violent economic manipulation to low levels of violence using mercenaries. They can involve changes in deployment, basing, advisory missions, arms transfers, or military exercises; claims to military zones; use of sanctions and trade barriers; economic warfare; technological competition; information warfare; support of other states and non-state actors; and other forms of competition designed to gain strategic and tactical advantage as part of the current competition between the United States, China, and Russia.

This approach meets many of the criteria for multi-domain battle that is part of the evolving definitions of "multi-domain" used by the U.S. Army Training and Doctrine Command (TRADOC). For example, one 2018 document focused on actual battle:[12]

> **Multi-Domain** Battle requires converging political and military capabilities – lethal and nonlethal capabilities – across **multiple domains** in time and space to create windows of advantage that enable the Joint Force to maneuver and achieve objectives, exploit opportunities, or create dilemmas for the enemy.
>
> Multi-Domain Battle necessitates that the U.S. view the operating environment, potential adversaries, and their capability sets from a different perspective. We must define the warfighting problem based on the complexities of the modern battlefield, the rate of change in terms of information access and decision, and the role that non-traditional or proxy/hybrid actors play to shape operations, especially prior to armed conflict. Multi-Domain Battle requires the ability to maneuver and deliver effects across all domains in order to develop and exploit battlefield opportunities across a much larger operational framework. It must include whole-of- government approaches and solutions to military problems and address the use of multinational partner capabilities and capacity.
>
> Multi-Domain Battle entails collaboration and integration of comprehensive effects and enablers. The rapid pace of modern conflict requires a mission command construct for executing Multi- Domain Battle that includes common networks, tools, and knowledge products. It also necessitates mission orders, shared understanding and visualization of the battlespace, and subordinate commanders executing operations with disciplined initiative within the senior commander's guidance that is empowered from above. Command and control is only a component of that philosophy.
>
> To conduct Multi-Domain Battle, all domains and warfighting functions are integrated to deliver a holistic solution to the problem. Federated solutions will not work. We need a comprehensive, integrated approach inherent in our forces.

However, a 2017 TRADOC document took a broader and more realistic view,[13]

> Four interrelated trends are shaping competition and conflict: adversaries are contesting all domains, the electromagnetic spectrum (EMS), and the information environment and U.S. dominance is not assured; smaller armies fight on an expanded battlefield that is increasingly lethal and hyperactive; nation-states have more difficulty in imposing their will within a politically, culturally, technologically, and strategically complex environment; and near-peer states more readily compete below armed conflict making deterrence more challenging.0F1 Dramatically increasing rates of urbanization and the strategic importance of cities also ensure that operations will take place within dense urban terrain. Adversaries, such as China and Russia, have leveraged these trends to expand the battlefield in time (a blurred distinction between peace and war), in domains (space and cyberspace), and in geography (now extended into the Strategic Support Area, including the homeland) to create tactical, operational, and strategic stand-off.1F2 For the purpose of this document, Russia serves as the pacing threat. In fact, Russia and China are different armies with distinct capabilities, but assessed to operate in a sufficiently similar manner to orient on their capabilities collectively.
>
> In a state of continuous competition, China and Russia exploit the conditions of the operational environment to achieve their objectives without resorting to armed conflict by fracturing the U.S.'s alliances, partnerships, and resolve. They attempt to create stand-off through the integration of diplomatic and economic actions, unconventional and information warfare (social media, false narratives, cyber attacks), and the actual or threatened employment of conventional forces.2F3 By creating instability within countries and alliances, China and Russia create political separation that results in strategic ambiguity reducing the speed of friendly recognition, decision, and reaction. Through these competitive actions, China and Russia believe they can achieve objectives below the threshold of armed conflict.

The problem with even this definition, however, is that the military will only be part of such operations – and probably a notably smaller part in the case of China. Many multi-domain operations will not involve the actual use of military force. Multi-domain operation will often be entirely civil or economic – using non-military means to achieve a strategic or tactical objective. It many other cases, the use of military forces will be demonstrative, involve sharply limited

operations, or be entirely in support of other state or non-state actors. Multi-domain operations will be the tools of Sun Tzu rather than Clausewitz.

It is equally important to note that such operations will be part of an enduring process of competition – and sometimes confrontation – between the U.S. and China, U.S. and Russia, or the U.S. against both China and Russia – that will occur indefinitely into the future, in many different ways, and in something approaching a global level.

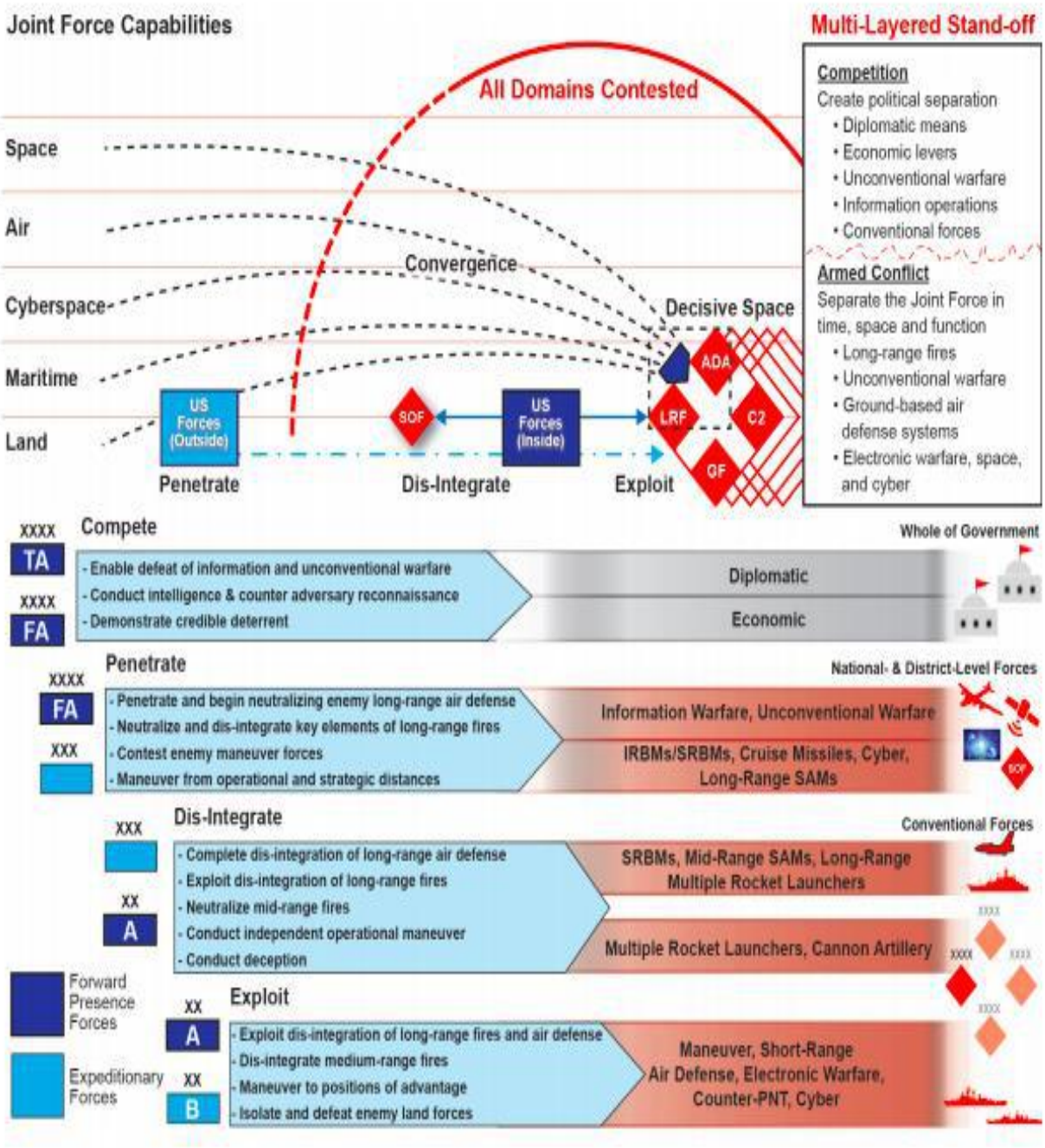
Many such operations will be part of a "culture" of competition that is initiated and executed on something approaching a government-wide level without some master plan or detailed level of coordination. Some – like information warfare, using the Internet, or many lower-level industrial and technical espionage – will require mass efforts or be conducted on a target of opportunity level. This is clear from the number of lower level Chinese and Russian actors that have been identified in open source background briefings and from the number of reports on commercial, cultural, media, and trade efforts that are not associated in any way with the Chinese or Russian military.

In fact, one of the key issues for the U.S. is first how to develop intelligence and analysis capabilities capable of tracking the full pattern of diverse Chinese and Russia civil-military competition, and assessing the relative impact, risk, and need for countermeasures. The one key question the U.S. will have to determine in the process is who in the Chinese and Russian government is actually making such decisions, what are the organizational centers of such activity, how do they relate to other countries on a global basis, and what U.S. response is needed if any. So far, it is unclear that there is any clear structure in the various Departments of the U.S. government – or in the U.S. intelligence community – that actually addresses Chinese and Russian strategic competition on this level.

In practice, finding new ways to compete that cut across the boundaries between civil, gray zone, and hybrid warfare is proving to be a critical part of American strategic competition with China and Russia. U.S. strategy must be based on the assumption that there are no fixed rules that define "gray zone" operations that clearly separate the use of military force from political and economic action or from competition based on a wide spectrum of different activities on a national, regional, and global basis. This assessment uses terminology like "gray zone" and "irregular warfare" operations as broad guidelines to stress the need for U.S. strategy to respond to the full range of options – from the grand strategic to the tactical level – as the United States competes with Russia and China.

There are clear historical precedents for doing so. They include most of the portions of human history when major powers of empires were not committed to something approaching total war. Human history – alongside such forms of competition – is a key focus of Clausewitz and especially Sun Tzu. It is also clear that both Russia and China now actively compete with the U.S. on this basis, and any definition of this competition that excludes their full range of activities cannot be an effective basis for shaping U.S. strategy.

Chart One: Multi-Domain Operations (MDO) Solutions



Source: U.S. Army Training and Doctrine Command, "Multi-Domain Battle: Evolution of Combined Arms for the 21st Century 2025-2040," December 6, 2018, https://www.tradoc.army.mil/Portals/14/Documents/MDO/TP525-3-1_30Nov2018.pdf

Chinese Strategy for Civil, Gray Zone, and Hybrid Competition

This need to look beyond the boundaries of any given type of competition is illustrated by the fact that when one examines the full range of actual Chinese and Russian competition with the United States, it becomes clear that there is no practical way to separate civil, gray zone, and hybrid operations. It becomes all too clear that both China and Russia supplement their military activities by using opportunistic and pragmatic versions of all three streams of efforts to help meet their strategic objectives and expand their influence as a great power.

The separate chronology of Chinese operations shows that China is conducting a number of broad campaigns that use all of these methods of competition interchangeably,

The Belt and Road Initiative (BRI) campaign is China's large-scale project to connect Asia, Africa, and Europe through both economic networks and physical infrastructure. China has partnered with the following countries for its Belt and Road Initiative: Russia, Pakistan, Bangladesh, Sri Lanka, Afghanistan, Nepal, Maldives, Bhutan, India, Mongolia, Indonesia, Thailand, Malaysia, Vietnam, Singapore, Philippines, Myanmar, Cambodia, Laos, Brunei, East Timor, Kazakhstan, Uzbekistan, Turkmenistan, Kyrgyzstan, Tajikistan, Saudi Arabia, UAE, Oman, Iran, Turkey, Israel, Egypt, Kuwait, Iraq, Qatar, Jordan, Lebanon, Bahrain, Yemen, Syria, Palestine, Poland, Romania, Czech Republic, Slovakia, Bulgaria, Hungary, Latvia, Lithuania, Slovenia, Estonia, Croatia, Albania, Serbia, Macedonia, Montenegro, Bosnia and Herzegovina, Ukraine, Azerbaijan, Armenia, Belarus, Georgia, and Moldova.

The Trade War campaign is the use of economic gray zone operations against the United States, which has devolved into a tit-for-tat exchange on traded goods between China and United States.

The Espionage campaign has historical pretense; however, China is now targeting the development of technological innovation from the United States, specifically, the Chinese tech giant, Huawei, is in direct competition with the United States to develop a 5G network.

The Disinformation campaign takes place in the United States, the European Union, Australia, and even South America to target any condemnation on China's role in the spread of Covid-19. The campaign is a larger sustained effort to manipulate information on social media platforms.

The Maritime campaign is China's geopolitical claim to artificial islands and maritime zones in the South China Sea. China conducts mostly negative gray zone operations, including aggressive military demonstrations of force and illegal construction of reefs.

The Russian-Relations campaign is China's attempt to align itself with Russia to compete with the United States and the West.

The Separatist campaign is China's response to separatist movements in Xinjiang, Hong Kong, Taiwan, and Tibet. These gray zone operations use economic deterrence, military shows of force, and political demonstrations of disapproval.

The Africa campaign enables China to exploit an expanding market in the African continent including access to natural resources and a port in Djibouti. Many of these countries are already part of the Belt and Road Initiative (BRI) however not all of these projects are part of the BRI campaign.

The Arctic campaign, which China sometimes refers to as the "Ice Silk Road," is the cooperation and development of science and trade with Arctic countries, specifically Russia.

Russian Strategy for Gray Zone Competition

The chronology of Russian operations identifies a similar mix of campaigns that again combines civil and military tactics and operations while tailoring the weight of efforts between any given use of civil, gray zone, and hybrid activities to suit the objective,

The Active Measures campaign is a broad influence campaign specifically against the United States. These gray zone operations range from espionage to cyber-attacks to election meddling.

The Broader West/EU campaign is similar to the Active Measures campaign, but it targets mainland Europe, and more specifically NATO. Gray zone operations also include espionage, cyber-attacks, and election meddling, but they also heavily use trade coercion and military demonstrations near NATO sites.

The Southeastern Europe/Western Balkans campaign is a more targeted campaign towards the geographical and cultural region that can be coerced to sharing favorable relations with Russia. Many of these countries either already have membership to the European Union and NATO or they have attempted to join, but these countries also have the opportunity to be influenced more heavily by Russia.

The Western Border campaign includes the Baltic states, Ukraine, and Georgia. This campaign is more specific than the Near Abroad campaign because although these countries are also post-Soviet states, Russia uses more aggressive and negative gray zone operations, specifically the threat of territorial occupation.

The Near Abroad campaign use gray zone operations on states of the former Soviet Union (FSU) including Kazakhstan, Kyrgyzstan, Turkmenistan, Tajikistan, Uzbekistan, Armenia, Azerbaijan, Belarus, and Moldova. Many of these operations involve positive trade unions and diplomatic relations.

The Syrian campaign is Russia's military efforts in the Syrian Civil War, which also involves Russia's relations with Turkey.

The Middle East campaign is Russia's attempt to expand its influence in the Middle East with the Gulf States, Israel, and the Levant. There has been limited progress in this campaign, but it is still notable to track with Russia's presence in Syria.

The Sino-relations campaign is Russia's attempt to develop a stronger relationship with China.

The Africa campaign has recently received high levels of attention by the Kremlin to expand its influence on the African continent. This campaign includes debt forgiveness, Russian access to natural resources, military training, and a practice ground for Russian private military companies (PMCs).

The Latin America campaign is Russia's expanding influence in the backyard of the United States. Although Russia has very novel relationship with most countries in Central America and South America, it has already developed notable relations with Venezuela, Cuba, and Nicaragua.

The Southeast Asia/India campaign is another upcoming campaign that expands Russia's relationship in the region. However, due to China's strong presence, Russia has only formed initial relationships, although they do include some arms sales.

The Arctic campaign focuses on Russian gray zone operations to stake a claim to the natural resources and strategic military position in the Arctic.

Calculating the Balance of Power in Broader Terms

The sections of this analysis that compare national security spending and then compare economic power and civil competition show that China currently has a significant edge over Russia in executing such efforts, and it has far more civil resources in competing with the United States. Over the last decade, China has increasingly shown that it can make major strategic gains by competing at different levels of "warfare" and by using unconventional means.

Simply creating modern Chinese military forces in ways that match the growth of its economy has made China the second ranking power in the world. Taking actions like fortifying islands in the Pacific, regardless of their vulnerability, has given it a major new strategic profile. So has debating maritime and air control zones with Japan, as well as actions like building a token carrier force – and taking that carrier through the Taiwan Straits – which have produced the same effect.

While China's global economic expansion has triggered growing concerns outside the United States, its "Belt and Road Initiative" (BRI) approach to geo-economics has almost certainly done more to enhance China's status as a great power than its military build-up. Just as important as the modernization of its military forces – and its expansion to the "second island chain" in the Pacific

– its status in trade, investment, and economic links to other states and its ability to create an expanding zone of economic influence – that extends through Asia, it border areas with Russia, and the Strait of Malacca to the Arab-Persian gulf – have given more power and influence to China with greater benefits than any potential use of force that could lead to a serious conflict would be able to accomplish.[14]

Russia has not been able to challenge the U.S. at an economic level, but it has made its own gains in Eastern Europe, Ukraine, and Syria by making very limited use of its forces and supporting other states and non-state actors. Russia has combined political, economic, and demonstrative military efforts to put pressure on the NATO states closest to its borders. More recently, there are reports that U.S. intelligence sources have assessed that Russia offered bounties to the Taliban to kill U.S. soldiers stationed in Afghanistan – although these have not been confirmed by the Secretary of Defense or senior military commanders.[15]

Russia has used its energy exports, trade, and economic weapons as well. Russia is also attempting to diversify its economic partnerships in Africa – with the Central African Republic, Sudan, and others – by making contracts concerning natural resource deals and the use of private military companies (PMCs). It has done an increasingly expert job of exploiting the fault lines between the U.S. and its strategic partners with arms sales and advisory efforts – and more specifically by taking advantage of the political tensions in the Middle East. While it unclear that Russia focuses on the teaching of Sun Tzu, they clearly recognize that there are many areas of competition where they do not need to win, but they merely have to deny any form of "victory" to the U.S. or other national targets.

There is no way to predict how the Coronavirus and the overall process of civil competition between the great powers will affect these patterns of competition, or just how serious and enduring it will become. It is not yet possible to predict its relative impact on the United States, China, and Russia – or on their economic strength, their military spending, and national security goals and operations. It is all too possible, however, to predict that it will create a massive new set of economic and political vulnerabilities in other states, and that China and Russia are already deeply engaged in a form of competition, which they use to exploit the new opportunities that they helped to create.

II. Competition and the Impact of Nuclear Forces and Mutual Assured Destruction

> The art of war teaches us to rely not on the likelihood of the enemy not coming, but on our own readiness to receive him; not on the chance of his not attacking, but rather on the fact that we have made our position unassailable ― Sun Tzu, The Art of War

The following chapters explore military competition in gray area, hybrid, low-level, and indirect warfare operations in depth, as well as in the many levels of civil competition. It is important to emphasize, however, that this structure of competition depends on the degree to which each major power is deterred from high level theater conflict and the equivalent of nuclear warfare. It assumes that each of the three major powers will not escalate to levels of conflict that are so high and costly that no power could benefit from such escalation, and that each major power will act decisively to ensure no other competitor could assume their vulnerability to such forms of conflict.

It also makes the assumption that each power will act largely rationally, that ideology will not triumph over common sense, and that none of the three powers will become involved in a process of escalation or mutual miscalculation that they cannot control. So far, their recent history justifies these assumptions, but history in general is far less reassuring.

Civil competition – as well as limited and indirect forms of military competition – is a far less dangerous option for China and Russia than any major nuclear or theater conflict with the United States, and this assumption has to be kept in careful perspective. It scarcely means the U.S. can afford to lag behind in competing in theater, nuclear, and more intense forms of warfare. The history of modern warfare is in many ways the history of irrational levels of escalation made by miscalculation or mistake.

No One Wins a Truly Existential War

At the same time, there are good reasons not to focus on the classic military dimension and higher levels of war. As noted earlier, one key reason lies in the human, economic, societal, and political cost of any actual nuclear conflict – and the cost of any major theater conflict that can damage or exhaust the economy.

Nuclear arms races between major powers have created warfighting capabilities that have become the modern equivalent of an uncontrollable "potlatch." When a potlatch functioned properly, it avoided the many costs of war by holding a struggle for influence as a substitute for war between Native Americans in the Pacific Northwest. It was a contest where each tribe kept destroying their possessions until another tribe conceded to the other because it could not afford to lose more of its wealth. Failure to halt the process could destroy all of the tribes engaged, and even a limited contest could be crippling.

Any nuclear exchange between major powers involves far greater risks, and the human and economic costs can be truly existential in character. **Chart Two – Part One** displays open source estimates of the historical trends in the U.S. and the former Soviet Union (FSU) nuclear weapons, as well as in the current U.S., Chinese, and Russian nuclear forces. Looking at these numbers, it is clear that the United States and Russia are the current two nuclear superpowers – although Chinese nuclear weapon holdings are growing more rapidly, and China is introducing a wide range of new nuclear and dual capable delivery systems.

The graph at the top of **Chart Two – Part One** demonstrates that the rise and fall of U.S. and Russian nuclear weapons holdings also relay an important message. There has been a good functional reason for the sharp decline in the peak nuclear weapons holdings of the Former Soviet Union (FSU)/Russian Federation and the U.S. forces that led to a massive decline in total weapons after the mid-1980s with an emphasis on arms control. Once the United States and Russia – and also now China – escalate to strategic nuclear strikes on another major power's territory, there is a significant probability that this will inevitably lead to nuclear attacks on population centers.

Chart Two – Part Two provides a SIPRI estimate of all the world's nuclear forces as of January 2020. It reflects a rise in China's total inventory to 320 nuclear weapons versus 1,750 deployed weapons for the United States (total inventory of 5,800) versus 1,750 deployed weapons for Russia (total inventory of 6,375). These numbers do not reflect the nature of current deployments and trends in terms of delivery systems and yields – and there are major uncertainties in such estimates – particularly for China. These are explained in depth in the SPIRI report from which the table is taken – which is the "World Nuclear Forces" chapter of the *SIPRI Yearbook 2020: Armaments, Disarmament and International Security*.

The number of active strategic weapons is much smaller and is not known for China. The U.S. State Department does report the balance of U.S. and Russian strategic nuclear forces allowed under the START Treaty as of March 1, 2020:

- Deployed ICBMs, Deployed SLBMs, and Deployed Heavy Bombers – U.S.: 655; Russia 485.
- Warheads on Deployed ICBMs, on Deployed SLBMs, and Nuclear Warheads Counted for Deployed Heavy Bombers – US: 1,372; Russia: 1,326.
- Deployed and Non-deployed Launchers of ICBMs Deployed and Non-deployed Launchers of SLBMs, and Deployed and Non-deployed Heavy Bombers – US: 800; Russia: 754.

The Real-World Cost of Any Countervalue War

These START numbers are not inputs to some form of computer wargame. They are more than adequate to destroy most of the core urban populations of both Russia and the United States. History warns how often wars escalate in ways that the nations involved failed to predict, and then failed to control these wars from happening in the first place.

Today, any serious exchange of nuclear strikes on land-based military targets – particularly ICBM launchers, bomber bases, and nuclear facilities – will all have a major cumulative effect in terms of immediate collateral damage and the effects of fall out. No major power will accept the loss of all of its nuclear forces in a counterforce exchange, which will leave its cities vulnerable. Shifting from counterforce strikes to direct countervalue strikes on an opponent's cities and major economic centers is all too probable.

At the same time, the days in which START seemed to be a prelude to the end of a great power nuclear arms race seem to be over. China, Russia, and the U.S. all now compete in developing new nuclear strike systems as well as missile, air, and other defenses. They have effectively resumed an arms race that none of the three powers can win.

No power will grant another a meaningful edge if it can avoid it, and all have the material and technical capabilities to maintain a high level of mutual assured destruction regardless of the other

powers' efforts. Ironically, this both stabilizes the balance and limits the willingness to engage in a major war as long as each power carefully weighs the risk of escalation, but also simultaneously makes it harder to predict and control the process of escalation once a major conflict begins.

This means the U.S.-Chinese-Russian nuclear balance needs to be measured in terms of the present and future ability to inflict counterforce and countervalue strikes; to defend against them; and to survive with the subsequent end result of such an engagement in terms of human casualties, economic damage, and the ability to recover its social structure and political system.

It is the end result of using such systems – rather than the numbers and capabilities of nuclear weapons, delivery systems, and defenses – that count. Given the growing integration of U.S., Chinese, and Russian social and economic systems – and their increasing hyper-urbanization – this vulnerability has vastly increased since the early 1990s when doubtful studies indicated recovery of some pre-exchange norm would be possible.

As **Chart Three** shows all too clearly, the total population of 10 to 20 of U.S., Chinese, or Russian major cities is a warning of the massive damage that countervalue strikes on these cities would do to the population and economic base of each country, and it makes the outcome of such a war a de facto defeat for all of the powers concerned. The same would almost certainly be true of countervalue strikes on their holdings of nuclear weapons and their nuclear delivery systems – which would often require ground bursts and produce massive amounts of fall out. Some classic studies of such effects – like the Office of Technology Assessment (OTA) study on *The Effects of Nuclear War* that was published in 1979 – have been largely forgotten. The reality is, however, that the combined short and long-term costs of such wars would not destroy whole nations, but they would be devastating by prewar standards and lead to massive changes in the political, economic, and social structure of each target state.[16]

Put bluntly, the dead, injured, and starving will not be concerned with the pre-strike or post-conflict number of nuclear warheads, delivery systems, or the details on the weapons system which delivered the final blow and whether it was hypersonic or some new form of nuclear torpedo. The survivors will have to live with the aftermath and will stay vulnerable to different degrees. The "winner" – in terms of the power with the fewest dead and dying – will have lost so much that the end result will also be a defeat, and a broken-back series of further exchanges would only make things worse.

Unless a given major power can avoid nuclear "mutual assured destruction" on even a comparatively limited basis, it has lost the war in any meaningful terms. The moment nuclear war approaches this level of escalation – through limited strikes, limited yields, or targeting the other side's nuclear forces – the risk becomes unacceptable to any rationale power. In short, it is far more important to estimate the consequences and probability of a U.S., Chinese, and Russian nuclear conflict than it is to compare each nation's trends in nuclear delivery systems, warhead storage, and nuclear modernization.

Moreover, the emergence of China as the world's second ranking major economic power has radically changed the balance that existed during the Cold War. The United States, China, and Russia are now competing in the equivalent of a "three cornered race." The grim reality that any combination of two out of the three major nuclear powers that participated in a nuclear exchange would face, is that if the third nuclear power can stand aside, it will "win" in very real terms. Any nuclear war that becomes an exchange between the United States and Russia alone would make China the winner, regardless of its smaller nuclear inventories.

Wild Cards in Mutual Assured Destruction

If there are key "wild cards," in the current level of risk associated with the mutual assured destruction, they lie in the present arms races, especially with the fact that military technology is evolving in ways that may increase the risks of major wars in new ways. Improvements in missile accuracy allow progressively smaller nuclear yields to be used to destroy critical targets – creating a growing uncertainty as to whether a given power will risk retaliating with high yield weapons that could trigger a broader exchange.

More critically, advancements in accuracy and warhead design allow a wide range of "conventionally" armed systems to be used at virtually any range to destroy critical smaller military civil targets as well as targets in space. As the U.S. demonstrated in attacking key civil targets in Iraq during the first Gulf War in 1991, conventional strike systems are increasingly becoming the equivalent of "weapons of mass effectiveness."

Hypersonic weapons increase these risks, as do the steady expansion of the range of different missile, air breathing, rail gun, and high energy systems that can be used to strike land, naval, and air targets – which also creates new challenges to the defending power in characterizing nuclear versus non-nuclear targets. One recent example of this evolving threat was the Houthi-Iranian missile attack on major Saudi petroleum facilities.

This may explain why senior Russian officers publicly stated on August 8, 2020, that it would regard any missile attack on its territory as "nuclear," although they were careful to avoid saying that Russia would respond with nuclear weapons or react before it could characterize the actual nature of such an attack, and instead only act on the basis of "reliable information."

Maj. Gen. Andrei Sterlin and Col. Alexander Khryapin stated in Russia's official military newspaper – Krasnaya Zvezda (Red Star) – that there would be no way in the future to know if an incoming long-range missile had a nuclear or conventional warhead, and that "Any attacking missile will be perceived as carrying a nuclear warhead…The information about the missile launch will be automatically relayed to the Russian military-political leadership, which will determine the scope of retaliatory action by nuclear forces depending on the evolving situation."[17]

The article did, however, also warn that Russia might escalate in the case of "enemy impact on critically important government or military facilities of the Russian Federation, the incapacitation of which could result in the failure of retaliatory action of nuclear forces…Russia has designated the 'red lines' that we don't advise anyone to cross…If a potential adversary dares to do that, the answer will undoubtedly be devastating. The specifics of retaliatory action, such as where, when and how much will be determined by Russia's military-political leadership depending on the situation."

Here, one does need to be careful about any such statements. The time windows for responding to a major nuclear attack – or to a crippling precision conventional attacks, if this becomes possible – have long permitted a major power to ignore any declared strategy about "no first use" and other forms of nuclear restraint. The United States, China, or Russia can quickly retarget its alerted nuclear forces and act within the time window necessary to respond to the launch of an all-out attack by another power. It seems almost certain that the U.S., China, and Russia would exercise great restraint in doing so, and choose not to launch – or "ride out" any attack other than one which it could characterize with absolute certainty – but declaring a "no first use" strategy is one thing.

Not having contingency plans to act preemptively under some extreme conditions – or launch on warning – seems very unlikely regardless of declared strategy and doctrine.

Improving air and missile defense have so far presented only a limited counter to offensive systems – in part because it is cheaper and easier to increase the number of strike systems than the number of defenses. Similarly, cyber and space warfare are also growing risks, but they still have major limits in effectiveness. Both also present the problem that if they are partially effective, they can lead the other power to major increases in its nuclear strikes – increases that may or may not make the end result even worse.

There is nothing the U.S. can do that can now totally eliminate the risk of a series of massive miscalculations, and another "Sarajevo" incident that leads to a nuclear war or worst-case theater conflict. However, worst case wars between the U.S. and China or the U.S. and Russia are now broadly deterred at every rational level, and the ongoing technological competition between them seems likely to continue to create a rough parity in both nuclear weapons and the evolving conventional long-range precision strike weapons. In effect, "mutual assured destruction" will remain "mutual assured deterrence" unless a given power makes drastic miscalculations.

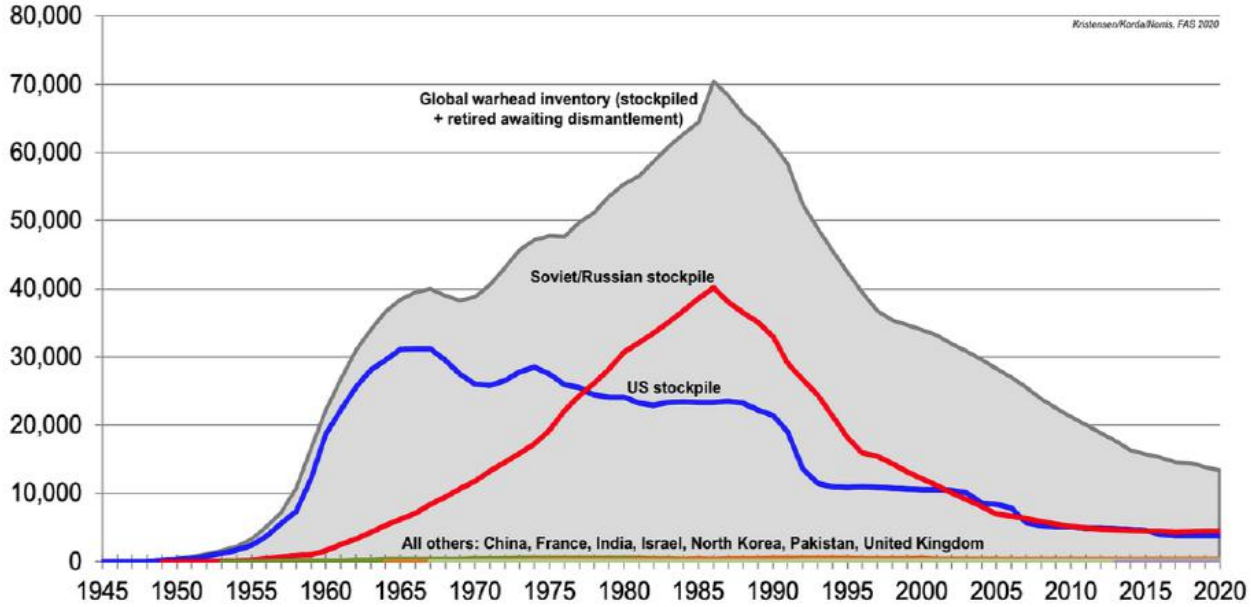
The second wild card lies in the risk that the deterrent impact of mutual assured destruction might be offset by a nuclear exchange that began with a power like North Korea and then escalated to involve two major powers like the United States and China. This would require both major powers to take extraordinary risks over the actions of a nation with secondary strategic value, but outside nuclear powers could act as "trigger forces" by leading the major powers to miscalculate or become involved in a process of escalation they could not fully control.

Another such contingency would be a major future nuclear exchange between China and India, if China felt that Indian strikes would leave it vulnerable to the U.S. – a doubtful, but potentially possible future scenario. More broadly, the only credible mission for either British or French nuclear forces is to respond to a Russian nuclear attack on NATO, and particularly on their soil. To be blunt, this is an extremely low probability scenario, and British and French nuclear forces are to some extent an expensive anachronism left over from the Cold War.

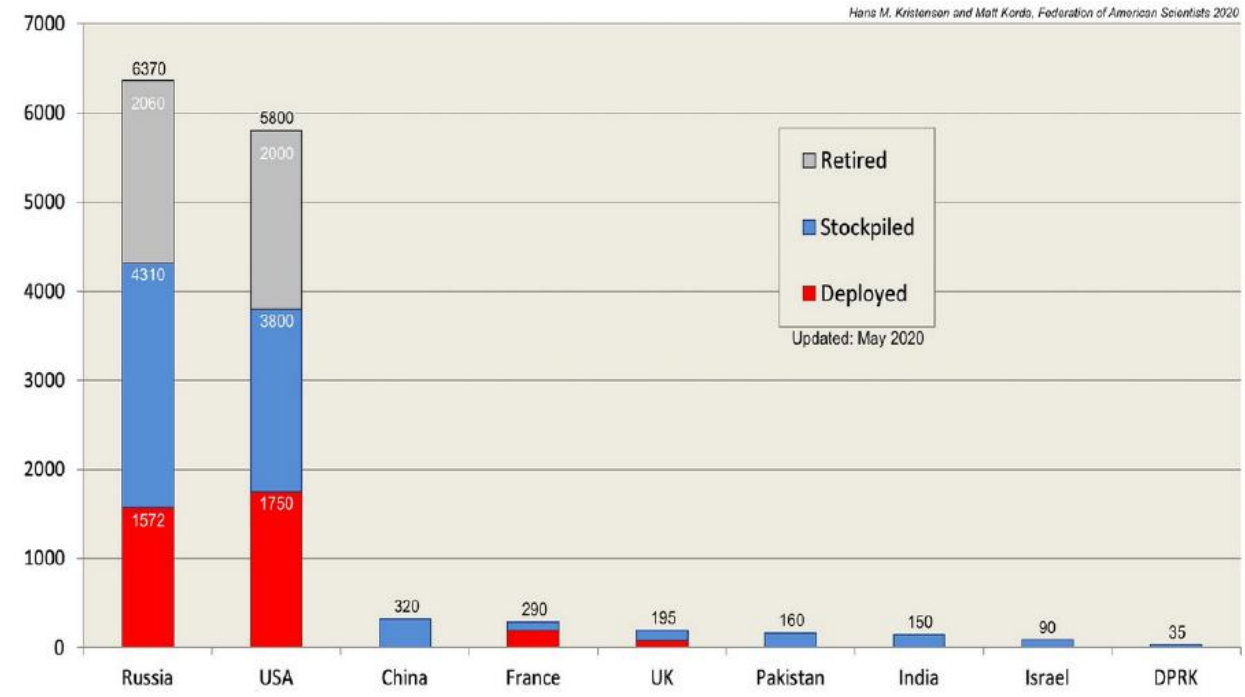
Finally, it is at least possible that some scenario could arise in which Russia and China both cooperated in a nuclear strike against the United States, or that either Russia or China followed up a major nuclear exchange between the U.S. and another power by carrying out a "broken back" attack to completely cripple the United States. Once again, the real world change of such a contingency occurring seems very low, but nevertheless, war can be all too irrational.

Chart Two – Part One: Estimated Global Nuclear Weapons Inventories: 1945-2020

Estimated Nuclear Weapons 1945-2020



Estimated Nuclear Weapons in 2020



Source: Hans M. Kristensen and Matt Korda, "Status of World Nuclear Forces," https://fas.org/wp-content/uploads/2020/04/WarheadInventories2020-1.jpg.

Chart Two – Part Two: Worldwide Holdings of Nuclear Weapons in 2020

All figures are approximate. The estimates presented here are based on public information and contain some uncertainties, as reflected in the notes to tables 10.1–10.10.

Country	Year of first nuclear test	Deployed warheads[a]	Stored warheads[b]	Other warheads	Total inventory
United States	1945	1 750[c]	2 050[d]	2 000[e]	5 800
Russia	1949	1 570[f]	2 745[g]	2 060[e]	6 375
United Kingdom	1952	120	95	–	215[h]
France	1960	280	10	..	290
China	1964	–	320	–	320
India	1974	–	150	..	150
Pakistan	1998	–	160	..	160
Israel	..	–	90	..	90
North Korea	2006	–	..	[30–40]	[30–40][i]
Total[j]		**3 720**	**5 620**	**4 060**	**13 400**

.. = not applicable or not available; – = zero; [ ] = uncertain figure.

Note: SIPRI revises its world nuclear forces data each year based on new information and updates to earlier assessments. The data for Jan. 2020 replaces all previously published SIPRI data on world nuclear forces.

[a] These are warheads placed on missiles or located on bases with operational forces.

[b] These are warheads in central storage that would require some preparation (e.g. transport and loading on to launchers) before they could become fully operationally available.

[c] This figure includes approximately 1600 strategic warheads (about 1300 on ballistic missiles and nearly 300 on bomber bases), as well as *c.* 150 non-strategic (tactical) nuclear bombs deployed outside the USA for delivery by US and other North Atlantic Treaty Organization aircraft.

[d] This figure includes *c.* 80 non-strategic nuclear bombs stored in the USA.

[e] This figure is for retired warheads awaiting dismantlement.

[f] This figure includes approximately 1370 strategic warheads on ballistic missiles and about 200 deployed at heavy bomber bases.

[g] This figure includes *c.* 870 warheads for strategic bombers and nuclear-powered ballistic missile submarines (SSBNs) in overhaul and *c.* 1875 non-strategic nuclear weapons for use by short-range air, air defence and naval forces.

[h] The British Government has stated that the process to reduce the stockpile to 180 warheads is under way. Although some sources suggest that the stockpile remains at 215 warheads, it is possible that, under this process, the stockpile may have already been reduced to 195 warheads.

[i] There is no publicly available evidence that North Korea has produced an operational nuclear warhead for delivery by an intercontinental-range ballistic missile.

[j] Totals do not include figures for North Korea.

Source: Shannon N. Kile & Hans M. Kristensen, "World Nuclear Forces," *SIPRI Yearbook 2020: Armaments, Disarmament and International Security*, p. 326, www.sipriyearbook.org.

Chart Three: Mutual Assured Destruction: An Illustrative Target Base

(Population in Millions)

	United States		Russia		China	
Rank	**Name**	**Population**	**Name**	**Population**	**Name**	**Population**
1	New York	8,537,673	Moscow	10,381,222	Shanghai	22,315,474
2	Los Angeles	4,030,668	Saint Petersburg	5,028,000	Beijing	11,716,620
3	Chicago	2,687,682	Novosibirsk	1,419,007	Tianjin	11,090,314
4	Houston	2,340,814	Yekaterinburg	1,349,772	Guangzhou	11,071,424
5	Phoenix	1,679,243	Nizhniy Novgorod	1,284,164	Shenzhen	10,358,381
6	Philadelphia	1,573,688	Samara	1,134,730	Wuhan	9,785,388
7	San Antonio	1,541,456	Omsk	1,129,281	Dongguan	8,000,000
8	San Diego	1,438,060	Kazan	1,104,738	Chongqing	7,457,600
9	Dallas	1,359,133	Rostov-na-Donu	1,074,482	Chengdu	7,415,590
10	San Jose	1,030,796	Chelyabinsk	1,062,919	Nanjing	7,165,292
Top 10		**26,219,213**		**24,968,315**		**106,376,083**
11	Austin	983,366	Ufa	1,033,338	Nanchong	7,150,000
12	Jacksonville	907,529	Volgograd	1,011,417	Xi'an	6,501,190
13	Fort Worth	893,997	Perm	982,419	Shenyang	6,255,921
14	San Francisco	888,653	Krasnoyarsk	927,200	Hangzhou	6,241,971
15	Columbus	880,182	Saratov	863,725	Harbin	5,878,939
16	Charlotte	873,363	Voronezh	848,752	Tai'an	5,499,000
17	Indianapolis	860,902	Tol'yatti	702,879	Suzhou	5,345,961
18	Seattle	746,046	Krasnodar	649,851	Shantou	5,329,024
19	Denver	719,116	Ulyanovsk	640,680	Jinan	4,335,989
20	Washington DC	702,756	Izhevsk	631,038	Zhengzhou	4,253,913
Top 20		**34,675,123**		**33,259,614**		**163,167,991**
21	El Paso	692,100	Yaroslavl	606,730	Changchun	4,193,073
22	Boston	687,584	Barnaul	599,579	Dalian	4,087,733
23	Nashville	673,008	Vladivostok	587,022	Kunming	3,855,346
24	Detroit	665,713	Irkutsk	586,695	Qingdao	3,718,835
25	Portland	658,347	Khabarovsk	579,000	Foshan	3,600,000
26	Oklahoma City	653,865	Khabarovsk Vtoroy	578,303	Puyang	3,590,000
27	Las Vegas	653,840	Orenburg	550,204	Wuxi	3,543,719
28	Memphis	649,243	Novokuznetsk	539,616	Xiamen	3,531,347
29	Louisville	619,287	Ryazan'	520,173	Tianshui	3,500,000
30	Baltimore	601,188	Tyumen	519,119	Ningbo	3,491,597
Top 30		**41,229,298**		**38,926,055**		**200,279,641**

Source: Anthony H. Cordesman, "China and the New Strategic Nuclear Arms Race: The Forces Driving the Creation of New Chinese Nuclear Delivery Systems, Nuclear Weapons, and Strategy," *CSIS*, November 15, 2018, p. 66, https://www.csis.org/analysis/china-and-new-strategic-nuclear-arms-race.

Nuclear Modernization Remains Critical

It should be stressed that in making these points, they show that nuclear modernization – hopefully coupled with effective nuclear arms control – remains critical. It is the key to assuring that mutual assured destruction (MAD) is preserved while also assuring that the U.S. will not lose its massive nuclear edge over rogue nuclear powers like North Korea. The same is true of competing in long-range conventional precision strike systems and missile and air defenses. More advanced forms of arms control may limit these needs, but so far, there is little indication that this will be the case.

The fact that the U.S. needs to give more priority to competing in civil areas and in gray area and hybrid operations at lower levels of conflict – while also dealing with the impact of the Coronavirus crisis – does not mean it can back away from nuclear competition. The problem with the current U.S. strategies and defense plans dealing with Chinese and Russian competition is that it does not recognize the primacy that should be given to other aspects of competition, gray area operations, and different types of conflict.

Chart Four illustrates this continuing need for modernization of offensive systems by providing a snapshot of recent Chinese and Russian nuclear modernization. This chart only covers past steps, and both China and Russia have since announced major new areas of modernization. Particularly in the case of Russia, some announcements like the focus on hypersonic weapons and a long-range submersible nuclear strike system seem to be designed to highlight the fact that Russia is taking the lead in dramatic new areas, while down playing the fact that Russia is also more quietly modernizing the rest of its delivery forces.

In the case of China, it is now deploying land based multiple independently targetable reentry vehicles (MIRV'd) intercontinental ballistic missiles (ICBMs) for the first time. It is constructing a new nuclear capable bomber, deploying new dual-capable missiles, and making major increases in its still limited inventory of nuclear weapons for the first time in years. These trends have recently been reflected in the Chinese news articles, which publicly discusses the need for an increase to 1,000 warheads and a stockpile of 100 DF-41 ICBM's with MIRV'd warheads.[18]

Chart Four also does not reflect the fact that many new Chinese and Russian delivery platforms can be adapted to use both nuclear and conventional warheads, that they are examining the possible use of low yield nuclear weapons as a means of using nuclear weapons with less risk of escalation to high intensity conflicts, that they are committed to long-range precision strike systems that can do major damage with conventional warheads, or that they are currently pursuing high energy and rail gun technologies.

This is why the U.S. has embarked on its own major nuclear modernization, one that will preserve the present stability of the nuclear balance and deterrence through "mutual assured deterrence." As high as the price tag is for this program, U.S. modernization of its nuclear strike forces may seem excessive when taken out of context – and the CBO estimates that it will be $494 billion over the 2019–2028 period – but the cost of U.S nuclear modernization is also relatively moderate compared to the size of the U.S. economy and presents itself as an affordable burden.[19] The same is true of preserving a missile defense option and ensuring that the U.S. has the right assets in space, in its full variety of critical IS&R, and in C_4/battle management assets. Deterrence needs to steadily expand and/or modernize all of the necessary dimensions of "multi-domain" and "joint" warfare.

Accordingly, even if China or Russia should change their pace of modernization, the U.S. will have resources, technology, and time to keep pace with that change regardless of the deployment of hypersonic and other more advanced nuclear and conventional weapons and delivery systems. It can compete in missiles and air defenses, in space, in multi-domain warfare, and in creating a broad spectrum of transitional capabilities from long-range precision conventional strike systems to lower yield nuclear warheads.

Chart Four: U.S., Russian, and Chinese Nuclear Modernization: 2010-2018

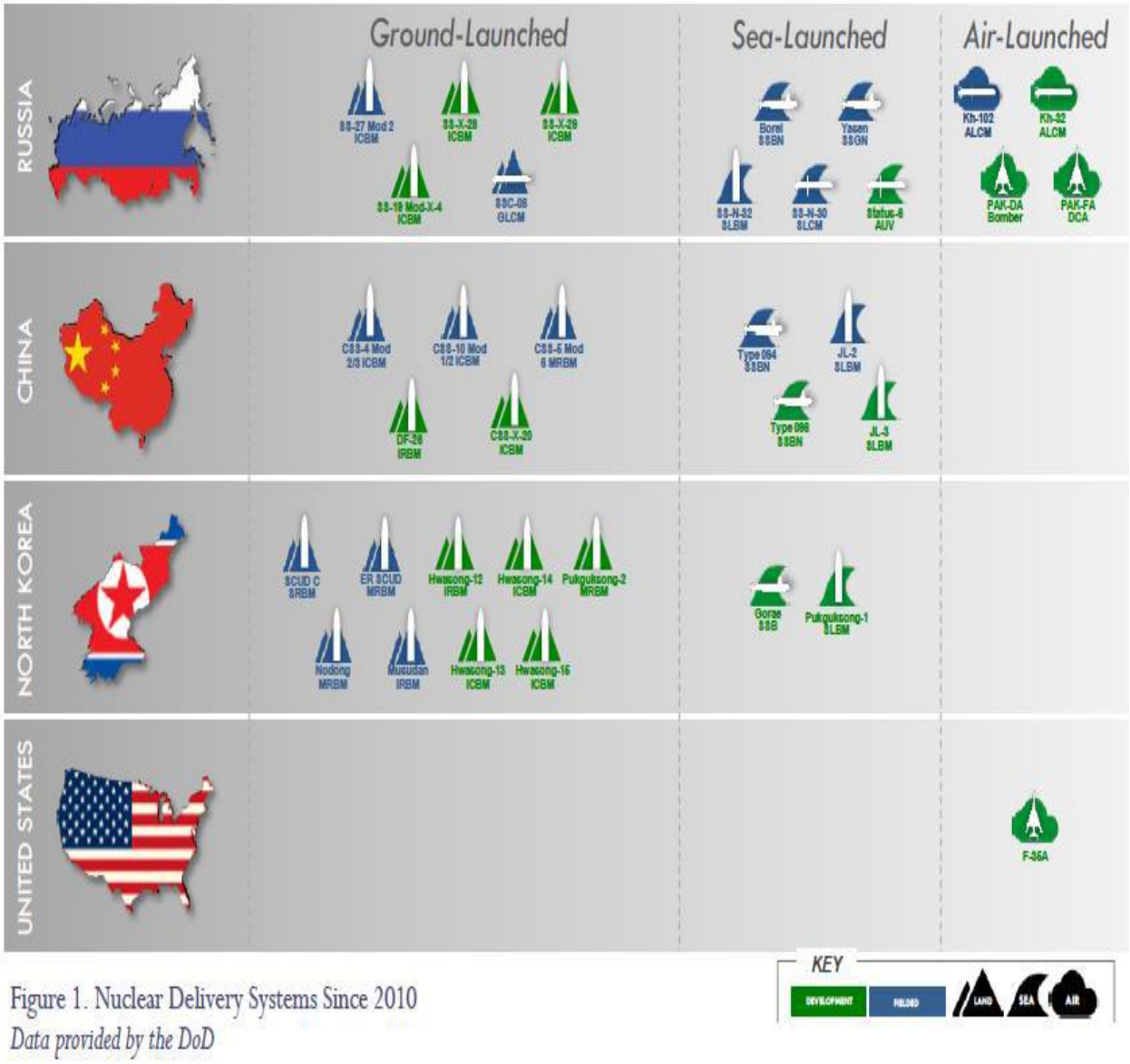


Figure 1. Nuclear Delivery Systems Since 2010
Data provided by the DoD

Source: Office of the Secretary of Defense, *2018 Nuclear Posture Review*, Department of Defense, February 2018, p. 8.

Nonstrategic Nuclear Weapons, Long Range Precision Conventional Strike, and New Forms of Warfare

There are other reasons to focus on maintaining U.S. leadership in nuclear and theater warfighting capabilities. The present nuclear arms race has a matching arms race in long range "conventional" precision strike systems that can destroy or cripple critical targets to the point where they become "weapons of mass effectiveness." This arms race is already having a major political impact in peacetime and could have even greater impacts at every stage of escalation that involves actual combat using such weapons.

The present asymmetries between powers can add to these uncertainties. As stated earlier in this analysis, both Chinese and Russian military analysts are aiming to achieve superiority on the battlefield with the use of limited resources and contact. Anti-satellite, other space warfare, and a wide range of advances in cyberwarfare, IS&R, and information warfare also affect these efforts. Non-strategic nuclear forces may add to their capability for gray zone operations.

Russia has already used the threat from its non-strategic nuclear weapons to increase its influence along its borders. Breakthrough developments in hypersonic weapons with conventional warheads could advance Russia's interests by allowing it to project its strength using tactical shorter-range systems with lower yields that could be used on the battlefield. Russia completion of its project, GLONASS (Global Navigation Satellite System) will also support Russia's precision strike system and give Russia a global navigation system.[20]

The Congressional Research Service has released a report on nonstrategic nuclear weapons and its role in Russian national security that addresses many of these issues,[21]

> As was noted above, many analysts argue that Russia's nonstrategic nuclear weapons pose a risk to the United States, its allies, and others because Russia has altered its national security concept and military strategies, increasing its reliance on nuclear weapons. Some fear that Russia might resort to the early use of nuclear weapons in a conflict along its periphery, which could lead to a wider conflict and the possible involvement of troops from NATO or other neighboring countries, possibly drawing in new NATO members. Some also believe that Russia could threaten NATO with its nonstrategic nuclear weapons because Russia sees NATO as a threat to its security. Russian analysts and officials have argued that NATO enlargement—with the possible deployment of nuclear weapons and missile defense capabilities on the territories of new NATO members close to Russia's borders—demonstrates how much NATO could threaten Russia.
>
> The 2008 congressionally mandated Strategic Posture Commission expressed a measure of concern about the military implications of Russia's nonstrategic nuclear forces. It noted that Russia "stores thousands of these weapons in apparent support of possible military operations west of the Urals." It further noted that the current imbalance between U.S. and Russian nonstrategic nuclear warheads is "worrisome to some U.S. allies in Central Europe." It argued that this imbalance, and the allies' worries, could become more pronounced in the future if the United States and Russia continue to reduce their numbers of deployed strategic nuclear weapons.
>
> Others have argued, however, that regardless of Russia's rhetoric, "Russia's theater nuclear weapons are not ...destabilizing." Even if modernized, these weapons will not "give Moscow the capability to alter the strategic landscape." Further, Russian weapons, even with its new military strategy, may not pose a threat to NATO or U.S. allies. Russia's doctrine indicates that it would use these weapons in response to a weak performance by its conventional forces in an ongoing conflict. Since it would be unlikely for NATO to be involved in a conventional conflict with Russia, it would also be unlikely for Russian weapons to find targets in NATO nations. This does not, however, preclude their use in other conflicts along Russia's periphery. As Russian documents indicate, Russia could use these weapons if its national survival were at stake.
>
> This view, however, has been tempered, in recent years, by both Russia's aggression in Ukraine and its frequent "nuclear saber-rattling." Not only have Russian officials reminded others of the existence and

> relevance of Russian nuclear weapons, Russian military exercises, bomber flights, and cruise missile launches have seemed designed to demonstrate Russia's capabilities and, possibly, its willingness to challenge NATO's eastern members. These actions have raised concerns about the possibility that Russia might threaten to use nuclear weapons during a crisis with NATO, in line with its apparent "escalate to de-escalate" strategy, to force a withdrawal by NATO forces defending an exposed ally or to terminate a conflict on terms favorable to Russia. While some analysts dispute this interpretation of Russia's doctrine, most agree that nonstrategic nuclear weapons appear to play a significant role in Russia's doctrine and war plans.

China does not yet have a full nuclear triad by U.S. and Russian standards because the PLA Air Force does not have a suitable strategic bomber force, although it is acquiring suitable systems.[22] China does, however, have four Jin-class nuclear powered ballistic missile submarines (SSBN) which can each carry up to 12 submarine-launched ballistic missiles (SLBMs) – giving China the ability to project nonstrategic power.[23]

The Congressional Research Service addressed the ways in which both Russian and Chinese nonstrategic nuclear weapons could affect U.S. national security,[24]

> Questions about the role of U.S. nuclear weapons in regional contingencies have resurfaced in recent years, as analysts have sought to understand how these weapons might affect a conflict with a regional ally armed with nuclear weapons. Some analysts doubt that U.S. nuclear weapons would play any role in such a contingency, unless used in retaliation after an adversary used a nuclear weapon against the United States or an ally, because U.S. conventional forces should be sufficient to achieve most conceivable military objectives. Others, however, argue that the United States might need to threaten the use of nuclear weapons, and possibly even employ those weapons, when facing an adversary seeking to use its own nuclear capabilities to intimidate the United States or coerce it to withdraw support for a regional ally. Some have suggested, specifically, that forward-deployed nuclear weapons with lower yields—in other words, nonstrategic nuclear weapons—might serve as a more credible deterrent threat in these circumstances.
>
> The 2018 Nuclear Posture Review adopted this perspective, and seemed to discount the approach, taken in both the Bush and Obama NPRs, of reducing the role of nuclear weapons by expanding the role and options available with advanced conventional weapons. It did not completely dismiss the value of U.S. conventional capabilities, but asserted that "conventional forces alone are inadequate to assure many allies who rightly place enormous value on U.S. extended nuclear deterrence for their security." These concerns were central to the NPR's recommendation that the United States develop two new types of nonstrategic nuclear weapons. Where the two previous NPRs sought to fill "gaps" in deterrence with ballistic missile defenses and advanced conventional weapons, the 2018 NPR asserted that new nuclear weapons were needed for this purpose.

Missile and Air Defenses Remain Potential Consideration

In addition, China is developing a growing family of missile defenses that can potentially be used for the delivery of both nuclear and conventional warheads. Nuclear modernization affects competition in defense as well as offense. A Department of Defense official made this clear in a briefing in July 2020,[25]

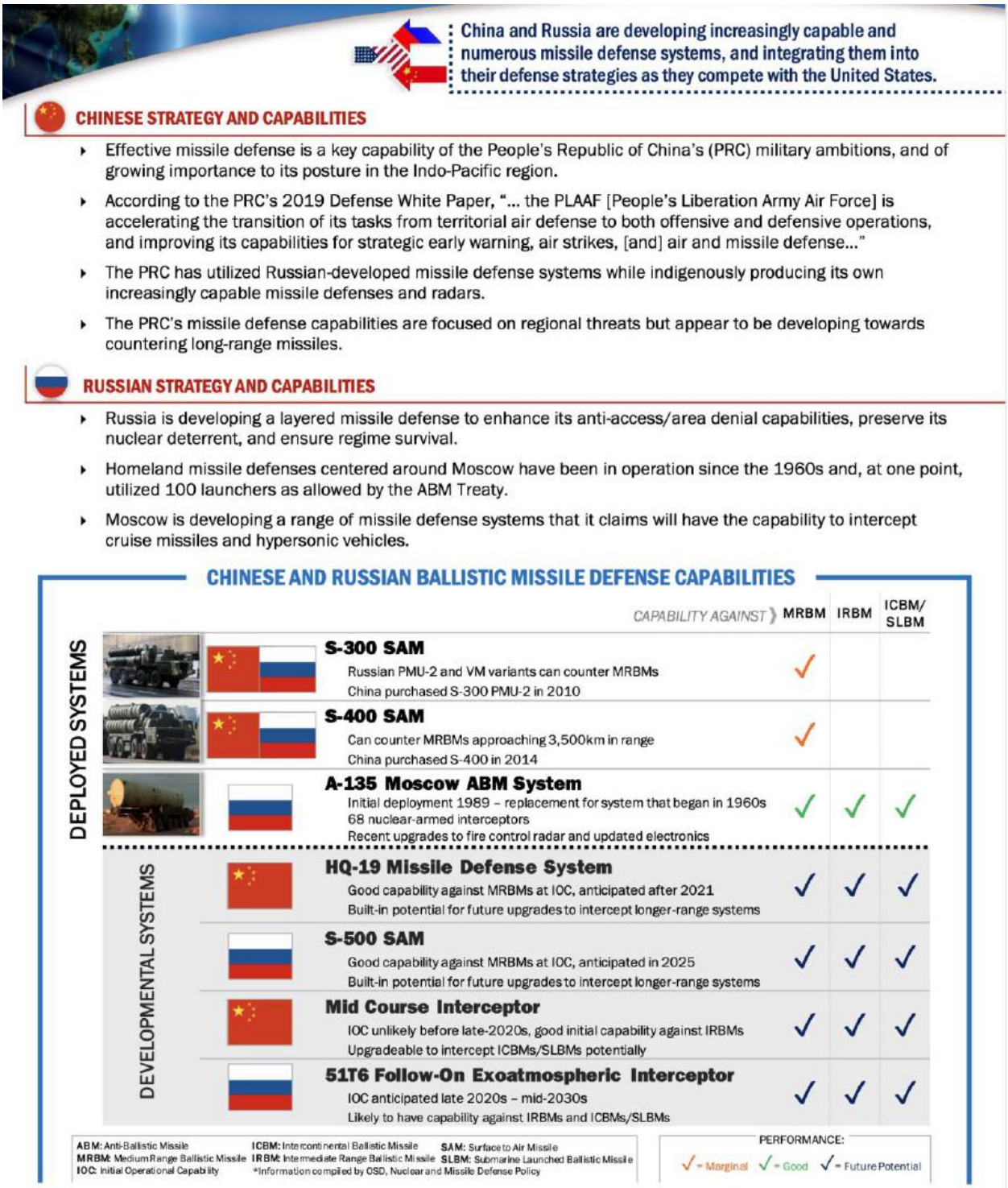
> "China and Russia are developing increasingly capable and numerous missile defense systems, and integrating them into their defense strategies as they compete with the United States," a DOD official said.
>
> …Russia is a long-time player. The former Soviet Union created a ring of anti-ballistic missile batteries around Moscow during the Cold War. These nuclear-tipped missiles still exist as part of Russia's A-135 anti-ballistic missile system. The system consists of 68 nuclear-armed interceptors. As part of President Vladimir Putin's military buildup, the system has received new radars and updated electronics. The beauty of this system is that the Russians have only to be close to an incoming threat. The downside is radiation from an intercept would contaminate thousands of acres of countryside.
>
> The Russians are getting ready to field the S-500 system. Designed to intercept short- to medium-range threats, they say the system will defend against ballistic, cruise and hypersonic missiles. The system's initial operating capability is set for some time in 2025.

> The other main threat comes from the People's Republic of China. The Chinese see missile defense as a key cog in their military ambitions. The People's Liberation Army Air Force is accelerating the transition of its tasks from territorial air defense to both offensive and defensive operations, according to a Chinese white paper on the subject. China's air force is also improving its capabilities for strategic early warning, air strikes, and air and missile defense.
>
> Right now, the Chinese are heavily dependent on Russian missile defense capabilities. The Chinese have invested in the Russian S-300 and S-400 systems – missile defense capabilities. The Chinese are assiduously studying the problem and have invested in research to build their own capabilities, DOD officials said.
>
> This includes the HQ-19 missile defense system, which could be used against incoming, medium-range ballistic missiles. Initial operating capability is set for next year.
>
> China is also developing a mid-course interceptor. The Chinese government said they tested that capability in February 2018. U.S. officials say initial operating capability is not likely until the late-2020s. They anticipate it would have good capability against intermediate-range ballistic missiles and could be adapted to target intercontinental s and submarine-launched ballistic missiles.
>
> The United States homeland's missile defense system is in place to defend against accidental launches or attacks from rogue states such as Iran and North Korea. Unlike Russia, the U.S. uses non-nuclear "kinetic kill" vehicles, which destroy incoming warheads using their speed and mass to collide with the threat.

The possible impact of that "Nth country's" nuclear forces must also be considered. North Korea is already an example of a threat that involves both the U.S. and China. Iran may become a threat to the United States. India's nuclear forces may be targeted on Pakistan, but they affect tensions and competition between India and China. British and French nuclear forces affect the balance in Europe and pose a potential threat to Russia.

Chart Five summarizes a similar level of progress in Russian and Chinese missile defenses. So far, such efforts are at most potential defenses against small powers with limited nuclear forces. It is not yet clear that the United States, China, or Russia will actually deploy enough defenses to affect another major power's nuclear strike capabilities or any extensive deployment of hypersonic or other advanced precision conventional strike systems.

Chart Five: Chinese and Russian Missile Defense Developments


China and Russia are developing increasingly capable and numerous missile defense systems, and integrating them into their defense strategies as they compete with the United States.
CHINESE STRATEGY AND CAPABILITIES
Effective missile defense is a key capability of the People's Republic of China's (PRC) military ambitions, and of growing importance to its posture in the Indo-Pacific region.
According to the PRC's 2019 Defense White Paper, "... the PLAAF [People's Liberation Army Air Force] is accelerating the transition of its tasks from territorial air defense to both offensive and defensive operations, and improving its capabilities for strategic early warning, air strikes, [and] air and missile defense..."
The PRC has utilized Russian-developed missile defense systems while indigenously producing its own increasingly capable missile defenses and radars.
The PRC's missile defense capabilities are focused on regional threats but appear to be developing towards countering long-range missiles.
RUSSIAN STRATEGY AND CAPABILITIES
Russia is developing a layered missile defense to enhance its anti-access/area denial capabilities, preserve its nuclear deterrent, and ensure regime survival.
Homeland missile defenses centered around Moscow have been in operation since the 1960s and, at one point, utilized 100 launchers as allowed by the ABM Treaty.
Moscow is developing a range of missile defense systems that it claims will have the capability to intercept cruise missiles and hypersonic vehicles.
CHINESE AND RUSSIAN BALLISTIC MISSILE DEFENSE CAPABILITIES
CAPABILITY AGAINST
MRBM
IRBM
ICBM/ SLBM
DEPLOYED SYSTEMS
S-300 SAM
Russian PMU-2 and VM variants can counter MRBMs
China purchased S-300 PMU-2 in 2010
S-400 SAM
Can counter MRBMs approaching 3,500km in range
China purchased S-400 in 2014
A-135 Moscow ABM System
Initial deployment 1989 – replacement for system that began in 1960s
68 nuclear-armed interceptors
Recent upgrades to fire control radar and updated electronics
DEVELOPMENTAL SYSTEMS
HQ-19 Missile Defense System
Good capability against MRBMs at IOC, anticipated after 2021
Built-in potential for future upgrades to intercept longer-range systems
S-500 SAM
Good capability against MRBMs at IOC, anticipated in 2025
Built-in potential for future upgrades to intercept longer-range systems
Mid Course Interceptor
IOC unlikely before late-2020s, good initial capability against IRBMs
Upgradeable to intercept ICBMs/SLBMs potentially
51T6 Follow-On Exoatmospheric Interceptor
IOC anticipated late 2020s – mid-2030s
Likely to have capability against IRBMs and ICBMs/SLBMs
ABM: Anti-Ballistic Missile
MRBM: Medium Range Ballistic Missile
IOC: Initial Operational Capability
ICBM: Intercontinental Ballistic Missile
IRBM: Intermediate Range Ballistic Missile
*Information compiled by OSD, Nuclear and Missile Defense Policy
SAM: Surface to Air Missile
SLBM: Submarine Launched Ballistic Missile
PERFORMANCE:
= Marginal = Good = Future Potential

Source: Department of Defense, "Chinese and Russian Missile Defense: Strategies and Capabilities," July 28, 2020, https://media.defense.gov/2020/Jul/28/2002466237/-1/-1/1/CHINESE_RUSSIAN_MISSILE_DEFENSE_FACT_SHEET.PDF

Mutual Assured Destruction Still Underpins Chinese and Russian Competition with the U.S.

For all the claims now being made about technical innovations to come, there seems to be little chance that any mix of modernization and/or expansion of nuclear offensive forces, conventional long-range strike systems, and strategic defenses – that is not linked to clear limits and arms control agreements – will be able to change MAD and the other risks of major wars between two great powers to a reasonable probability that they can actually "win" at a reasonable cost.

The resulting arms race will not accomplish anything more than creating a major drain on the defense budgets and economies of all three major powers. In the worst-case war scenario, the end result is still likely to be the equivalent of a three-dimensional chess game with more than two players, no rules, and where players may have many options but all end in smashing the game boards.

It is possible that the U.S. and China can eventually decisively outspend and out-deploy Russia, but only at an immense cost to their economies and investment in other military capabilities. The end result of such an effort – like all other aspects of a more intensive arms race in nuclear warfighting capabilities – is also likely to make every aspect of nuclear strategy and war planning more uncertain, and it will also certainly make escalation harder to control and evaluate under actual warfighting conditions.

If there is a key risk in the nuclear dimension, it is that arms control is becoming a growing challenge. As long as each side keeps racing to deploy a diverse mix of forces – the prospect of more nations proliferating is real – and it will be difficult to maintain anything approach START – much less consider a "zero option" approach for arms control for the United States, China, and Russia.

Future proliferators are also all too possible – not to mention the risk from the deployment of biological weapons that can create nuclear levels of damage or from precision conventional weapons that can be used to destroy critical target points. Once again, long-range precision strikes on critical targets make them the equivalent of "weapons of mass effectiveness."

The end result is that the U.S. has two ways to ensure that "mutual assured destruction" does remain "mutual assured deterrence." First, it can try to reach an arms control agreement that can assure all three major powers that there will be a stable level of mutual assured deterrence in spite of all these uncertainties. Second, it can actively compete in modernizing U.S. nuclear forces and long-range precision strike capabilities – and the same is true of its need to preserve a broad capability to fight a large-scale theater warfare as a second critical element of deterrence.

At the same time, these developments also increase the risks of miscalculation and escalation to actual war. These risks do tend to grow in direct proportion to how fast nuclear and long range-precision strike forces change. The more asymmetric the forces on each side become, the harder it is to acquire full information in real time. Like the arms race in the total U.S. and Soviet Union nuclear weapons cache shown during 1960-1990 in the top graph on **Chart Two**, the emergence of China as a major nuclear power and the changes in Russian forces are likely to at least slightly raise the risk that a serious nuclear exchange does take place.

The extent to which the deterrent impact of "mutual assured destruction" is effective depends on rational behavior at every state of escalation, and it cannot be ignored. "Worst case" wars do

happen. Ideally, to paraphrase Henry Kissinger, the threat of committing suicide will continue to deter being murdered. At the same time, Sarajevo and World War I are a classic example of the degree to which escalation can be driven by events, the unexpected actions of the other side, and miscalculation on all sides throughout the course of an entire war. World War II is only a marginally better case. It is a grim reality that strategy and rational behavior – not simply battle plans – are often the first casualties of war.

III. Global versus Real-World Uses of "Conventional" Military Forces

> "For to win one hundred victories in one hundred battles is not the acme of skill. To subdue the enemy without fighting is the acme of skill…There is no instance of a nation benefitting from prolonged warfare. ― Sun Tzu, The Art of War

There is little open source official data to draw upon if one turns to U.S. capabilities to deal with the evolving mix of Chinese and Russian threats in the other aspects of war – gray area tactics, hybrid operations, multidomain conflicts like space and cyber warfare, and indirect warfare. It is also strikingly difficult to tie U.S. defense budgets and most U.S. strategy documents to any form of analysis on how they impact U.S. competition with the other aspects of Chinese and Russian military forces and actions.

The Department of Defense's version of the FY2020 defense budget request refers to itself as a "strategy driven budget." In practice, it largely ignores the new national strategy announced in 2017 and 2018 on competition with China and Russia. Like most recent budget submissions since 2008, the FY2020 budget submission reflects the priorities of each military service for one fiscal year, without any serious effort at reflecting net assessments, program budgeting, costing the real-world future or outyear implications of the budget request, or providing any clear picture of its impact on America's combatant commands or even the real-world cost of America's ongoing wars. If anything, current Department of Defense open source reporting reflects a major regression from the budget submissions and posture statements of the McNamara era that were submitted in the 1960s.

The same is true of far too many U.S. official open source strategy documents. They fail to address U.S. competition with Russia and China except in narrow specific areas. They provide broad statements of goals and intentions, but they do not provide plans, programs, and actual budgets. They do not explain how the U.S. will tailor the combined capabilities of U.S. forces in each major regional and functional combatant command or how U.S. strategic partnerships will compete with the Chinese and Russian forces that drive competition in a specific regional or functional area. They also do not tie U.S. plans, programs, and budgets to the roles and capabilities of America's strategic partners.

Some U.S. strategy documents do provide limited open source statistics on comparative force strength. However, such assessments of the balance are an increasingly poor substitute for comparisons on how the full range of Chinese and Russian civil-military operations challenge the United States and its allies. Moreover, far too many military comparisons assess total strengths instead of the actual capability to use forces in a range of contingencies. Comparisons of total conventional forces at best provide limited insight into the ability to fight major wars that would involve Russia, China, or the United States if they were to become engaged in an all-out conflict for control of a region.

Such comparisons reflect "worst cases" that the U.S., China, and Russia have every reason to avoid. Although major wars at these force levels can occur – just as nuclear wars are possible – powers like Russia, China, and the United States have every reason to try to avoid them. It is the military capability to accomplish a practical objective at reasonable cost and at reasonable levels of risk – globally, regionally, or nationally – that counts. The U.S. must again be strong to deter such wars, but actually engaging in such large-scale conventional military conflicts means accepting risks and costs that sharply outweigh the potential benefits.

This is particularly true of any conventional conflict where the risk of escalation to a nuclear war becomes high, where it could directly threaten a key part of a major power's economy and trade activity, or where it would risk the loss of a key strategic partner. The economic and human cost of World War I and World War II – and the smaller peace time costs from the 1918 flu and the recent Coronavirus crisis – should be a clear warning to any power that does not let ideology and blind ambition triumph over common sense.

No matter how much the U.S. – or China and Russia – build up their global military forces and their readiness, the resulting increase in conventional strength will only serve a grand strategic purpose if they are able to deter a major theater conflict. The threat of using such forces must be both credible *and* be able to be used in ways where a rival is left with no strategic incentive to engage in such a level of war under these conditions.

Under these conditions, the massive economic changes the Coronavirus is making in U.S. politics and economics will play a critical role in shaping the ways the United States deploys and uses conventional forces, the positions of its current and potential strategic partners, and the way its forces compete with those of China and Russia on a global basis. It seems likely that the impact of the Coronavirus – and the cost of recovery – will make all three major powers even more cautious about any escalation that creates a serious form of conflict.

Focusing on Real-World Contingencies Rather than Total Conventional Forces

Chart Six and **Chart Seven** illustrate the limits to comparisons of total forces. They display snapshots of the comparative total size of U.S., Chinese, and Russian global military forces. They also provide a rough summary picture of each nation's current total military strength. Once again, the U.S. does need to compete with its major rivals. This competition will not, however, be shaped by total force size.

In the real world, the United States, China, and Russia will influence, deter, and engage by using selected amounts of joint forces tailored to their different objectives in given areas, nations, and regions. It most cases, this will involve limited blocs of military forces whose capability depends on their effectiveness in a particular contingency. This will involve factors like readiness; modernization; training; precision strike assets; as well as the full range of multi-domain, IS&R, and C_4/battle management assets – all capabilities that are not addressed in total force comparisons like those in **Chart Five** and **Chart Six**.

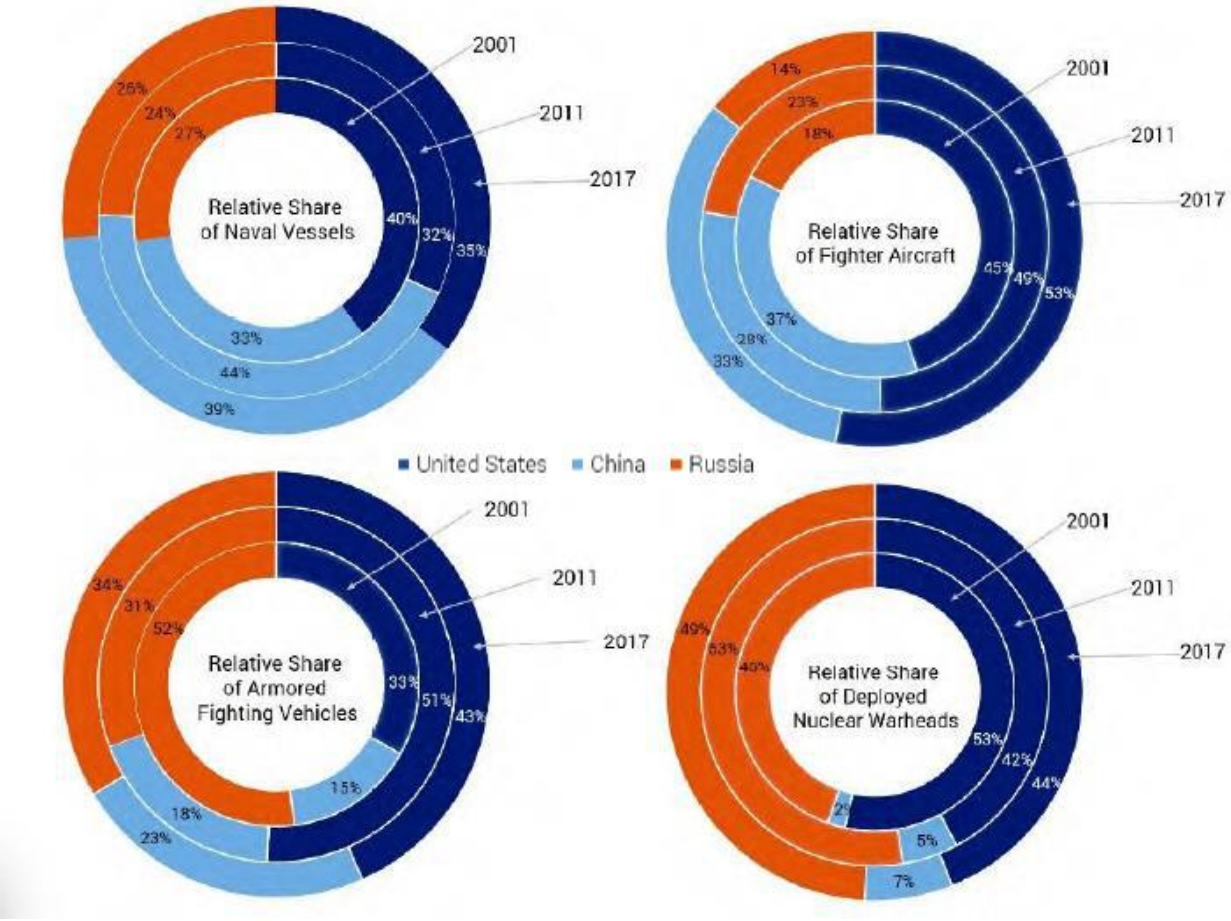
These smaller blocks of U.S., Chinese, and Russian forces will be tailored to maximize their interoperability to achieve given missions or objectives, and in ways that often matter more than force numbers. They will focus on the use of limited parts of each nation's global military assets to service its interest in a range of areas and countries outside their immediate territory where they have limited – rather than existential – interests. Their value will also be tied to the relative level of IS&R and multi-domain assets that actually apply to a given area of competition.

In virtually every case, the effectiveness of the limited number of U.S., Chinese, and Russian military forces that become involved will be also shaped by local and regional conditions. Political and economic conditions will be critical, as will the capabilities of the strategic partners and non-state actors on each side. Supporting the capability to shape allied or partner forces will be equally critical and involve both state and non-state military actors.

It many cases, gray area, hybrid, or indirect warfare will be the best way to "win" – and this will include "spoiler" operations that have a political, economic, or military impact on the opposing major power. Key tools in such conflicts will include arms transfers, cash, train and assist efforts, IS&R support, deployment of "volunteers," deployment of great power forces to deter actions on a partner or client, creating new infrastructure and bases, cyberwarfare, and information warfare. These are tools that great powers can use without ever firing a shot.

Barring some critical miscalculation of risk, the scale of direct combat between the major three powers will be carefully controlled and limited. Only a relatively small portion of U.S., Chinese, and Russian forces will normally be involved, and their primary use will often be demonstrative and consist of maneuvers and new deployments rather than actual fighting either against a competing major power or against a local or regional state or non-state actor.

Chart Six: Comparative Size of U.S., Chinese, and Russian Active Military Forces – Relative Force Size: 2001-2017



Source: International Institute for Strategic Studies (IISS) Military Balance, 2002, 2012, 2018. See United States Institute of Peace, "Providing for the Common Defense: The Assessments and Recommendations of the National Defense Strategy Commission," November 13, 2018, p.13, https://www.usip.org/publications/2018/11/providing-common-defense

Chart Seven: Total U.S., Chinese, and Russian Military Forces in 2019

Category	U.S.	China	Russia
Defense Expenditures ($US billions)	730	225+	61.6
Defense Budget ($US billions)	685	181	48.2
Active Military Personnel	1,379,800	2,035,000	900,000
Reserve Military Personnel	849,850	510,000	2,000,000
SSBN	16	4	10
ICBMs	400	98	340
IRBM	-	72	-
MRBM	0	174	76
Nuclear Bombers	112		
Army Active Personnel	481,750	975,000	280,000
Main Battle Tanks	2,389	5,850	2,800
Other Armored Fighting Vehicles (AFVs)	4,810	6,950	6,860
Armor Personnel Carriers	10,547	3,950	6,100+
Artillery (Towed, SP, MRL)	5,444	6,194+	2,802+
Surface-to-Surface Missiles (MLRS)	140?	?	140?
Attack Helicopters	714	270+	393+
Navy Active Personnel	337,100	250,000	150,000
Tactical Nuclear Submarines (SSGN.SSN)	53	6	10
Tactical Conventional Submarines	0	48	22
Principal Surface Combatants	121	82	33
Aircraft Carriers	11	1	1
Combat Capable Aircraft	981	404	217
ASW Helicopters	269	28	83
Cruisers	24	1	1
Destroyers & Frigates	86	80	28
Patrol and Coastal Combatants	84	209	118
Principal Amphibious Ships & Landing Ships	40	6	20
Mine Warfare	11	54	43
Marine Active Personnel	186,300	25,000	35,000
Tanks	447	?	300
AFVs, and APCs	1,895	237+	1,461
Artillery	1,452	40+	383
Combat Capable Aircraft	432	-	-
Attack Helicopters	145	-	-
Air Force Active Personnel	332,650	395,000	165,000
Combat Capable Aircraft	1,522	2,517	1,183
Bomber	139	176	138
Fighter Ground Attack (FGA)	969	794+	444
Fighter	-	759	180
Attack	143	140	264
EW, IS&R, ELINT	75	69	43
AE&W	31	13	9
Tanker	178	13	15
Transport/Airlift	331	336+	439
Long Range-Surface-to-Air Missile Launch units	480+	516+	186-226

Source: Relevant country sections of the IISS, *Military Balance, 2020***.**

Strategic Priorities for the Actual Use of U.S., Chinese, and Russian Military Forces

The strategic priorities for the U.S., Chinese, and Russian use of such forces will depend heavily on each power's capability to win and hold strategic influence in given countries and areas, as well as on its economic success and interests in global trade. These are all factors that will be affected by the Coronavirus crisis, which will impact other states throughout the world just as much as it impacts the United States, China, and Russia.

History provides all too many warnings that strategic priorities can suddenly change for unanticipated reasons, such as sudden changes in the leadership, politics, and alignments of other states. It also teaches a lesson that major powers can drastically miscalculate the risks in using force, escalate far beyond the value of the military objective, and react in irrational and unpredictable ways.

For the next decade, however, the Coronavirus crisis seems unlikely to drastically change the patterns of U.S., Chinese, and Russian competition. Each power is most likely to have broadly the same key areas of interest, and they will continue to use military forces in limited ways to achieve limited objectives – many shaped more by political and economic goals than military ones:

- **Key U.S. uses of military power will occur outside the United States and North America:** The U.S. is the only power that does not face potential threats near its borders. Its primary potential areas of military operations are Europe, Asia and the Pacific, and the Middle East/Gulf – its key combatant commands. However, it must continue to protect military power in ways that will include lower level uses of military force to deter and influence; support U.S. interests; fight limited wars and counter-extremism in Africa, Central America, and South America; and deter and defend other strategic partners and trade routes.

  The most direct areas of confrontation with China are now in Taiwan and the South China Sea, but these are not areas where a major war can produce lasting benefits to either state. They are rather areas where the ability to influence other regional powers, establish military presence, and develop strategic partners are critical.

  The situation is much the same in the case of Russia. The most direct areas of military competition lie in Scandinavia, the Baltic states, the NATO states that share a common border with Russia, and in the states along Russia's southern border like Georgia and the Ukraine – along with preserving U.S. and allied naval-air dominance in the Atlantic and Mediterranean.

  At the same time, the U.S. is equally dependent on its strategic relations with Japan and South Korea, its strategic presence in the Arab/Persian Gulf, and its influence over the flow of petroleum to key Asian economies – including China. So far, the U.S. only faces limited competition in these areas from China and Russia, but both powers are actively seeking to increase their presence and influence. The U.S. also faces a growing challenge from China's role in the Indian Ocean, Central Asia, and Pakistan, but China will soon begin to compete with Russia for military influence in India – a potential counterbalance to China.

  In every case, the U.S. position is at least as dependent on its strategic partners as on U.S. forces, and here the United States has to some extent become its own threat in maintaining

these partnerships and its ability to compete in gray area and lower-level/hybrid operations. Its focus on counterterrorism since 2001 has been coupled since 2017 with a focus on building up its total military power to deal with worst case conflicts with China and Russia, which it is attempting to achieve by seeking "burden sharing" efforts with its strategic partners in critical areas like NATO and South Korea – rather than preserving its strategic partnerships. This has been made worse at the civil level by its competition with China in trade wars, rather than building up its trade and economic cooperation with key trading partners and allies. Its withdrawal from the Trans-Pacific Partnership Agreement (TPP) is only one example out of many.

- **Key Chinese uses of military power will occur in Eurasia, the Indian Ocean, and the Pacific to defend China's expanding economic interests**: China's primary interest lies in establishing its status as the dominant power in Asia by expanding its forces and presence near Japan, South Korea, and Taiwan – and out to at least the perimeter of the Second Island Chain and the Philippines.[26] At the same time, it is creating a growing economic and trade presence in sub-Saharan Africa as well as high technology trade links to Europe.

  China is seeking to expand its civil and military strategic influence in Southeast Asia and develop its own strategic partnerships in areas like Cambodia, Myanmar, and Sri Lanka. It is slowly expanding its power projection capability in the Indian Ocean, its ties to Pakistan, its links to Central Asia, and its role in the Shanghai Cooperation Organization.

  It is expanding its economic presence in the Arab/Persian Gulf. This includes expanding its "anti-piracy" presence in the Indian Ocean near Somalia through actions like creating port facilities and bases in Djibouti and the Red Sea and its efforts to reach a mix of military and economic agreements with Iran that will counter the U.S. presence in the Persian/Arab Gulf in order to offer potential port facilities and to help secure the flow of petroleum exports to China. China's recent border incidents with India and the fact it has made Pakistan a key part of its "belt and road initiative" (BRI) are examples of such competition.

  Other key areas of Chinese gray area civil and military operations are in the Koreas, Taiwan, the South China Sea, its border with India and the Indian Ocean, Southeast Asia, Central Asia, the South Pacific, Australia, and New Zealand. China is also dealing with internal disputes concerning sovereignty, including movements in Xinjiang, Hong Kong, Taiwan, and Tibet. Most of its military gray zone operations and show of force will be centered around China's immediate geographical region.

  Steadily expanding the numbers of countries affected by its "belt and road initiative" (BRI) are essential to defend China's goals and global economic expansion. China is partnering with Cambodia, Myanmar, Laos and Sri Lanka in Asia, and it is also partnering with countries in Africa by offering infrastructure projects and soft loans in countries like Sudan and Botswana. It is using disputes of air and maritime control zones – as well as changes in its military exercise and deployments – to put pressure on Japan and to some extent on South Korea.

  The U.S. focus on the South China Sea, on Taiwan (to a lesser degree), and on the risks posed by the tensions between the two Koreas each present the possibility of a U.S.-Chinese confrontation, showdown with gray area operations, clashes, or even a limited war. At the same time, barring a massive restructuring of U.S. and Chinese trade, any

serious clash would be far more costly to both powers, regardless of which side appeared to be the "winner" – if any – and instead would likely trigger a major new arms race between the two powers. **Chart Eight** and **Chart Nine** illustrate the range of key areas of Chinese interest, and they also demonstrate China's broader strategic role as a major Asia power with growing links to Europe and Africa.

- **Key Russian use of force will occur in Europe in seeking to expand Russian influence in other regions:** Russia's primary potential areas of military operations are in Scandinavia, the Baltic region – including the Gulf of Bothnia and the smaller Baltic states – as well as Eastern Europe to revive its level of influence in its "backyard" and its near abroad in countries like Belarus, Poland, the Czech Republic, Slovakia, Hungary, Rumania, Moldova, Eastern Ukraine, Turkey, Georgia, Armenia, and Azerbaijan – directly competing to weaken NATO, EU, and U.S. strategic influence and power projection capabilities.

  Russia has increased its efforts to compete with the U.S. in arms sales and in train and assist efforts. It has expanded its role in Afghanistan and ties to the Taliban, and it has made use of information warfare – including intervention in American and European elections.

  Russia is also seeking to restore and expand its strategic and military influence in the Atlantic and Mediterranean while it also seeks to rebuild its influence in the Middle East, particularly in Syria and in the Persian/Arab Gulf – where it has both made major arms sales to Iran and is seeking to sell to Arab states and Turkey, as well as establish links to the Gulf members of OPEC in setting goals and limits to petroleum exports.

  It is seeking to affirm its influence in Central Asia; to use the Shanghai Cooperation Organization to its advantage; to influence states in Africa for access to both natural resources and a testing ground for its PMCs; to expand its influence in the Artic by possibly claiming new maritime trade zones there; and to maintain its current levels of influence in the Northern Pacific, the Koreas, and Japan. **Chart Ten** shows the scale of Russia's interests in its "near abroad" and the Artic.

  As is the case with China, the U.S. has been slow to react to Russian lower level military competition. Key cases in point are the U.S. reactions to Ukraine and Syria. At the same time, the analysis that follows shows that these goals are affected by the fact that Russia has retained far more relative military power than economic and trade power, and it is often better equipped to use tools like political gray area operations or spoiler efforts with the use of limited forces and support from local state and non-state military forces, arms sales, and a mix of volunteers and train and assist forces. Ukraine, Georgia, Syria, and S-400 sales to Turkey are cases in point.

- **Another key uncertainty is the degree to which Russia and China will become effective strategic partners in confronting the U.S. – either in the same contingency or by challenging the U.S. in different area, countries, or for different objectives in order to increase the difficulties for the U.S. to respond to such challenges.**

  The U.S. Director of National Intelligence warned in his 2019 threat assessment that,[27]

  > Threats to US national security will expand and diversify in the coming year, driven in part by China and Russia as they respectively compete more intensely with the United States and its traditional

> allies and partners. This competition cuts across all domains, involves a race for technological and military superiority, and is increasingly about values. Russia and China seek to shape the international system and regional security dynamics and exert influence over the politics and economies of states in all regions of the world and especially in their respective backyards.
>
> - China and Russia are more aligned than at any point since the mid-1950s, and the relationship is likely to strengthen in the coming year as some of their interests and threat perceptions converge, particularly regarding perceived US unilateralism and interventionism and Western promotion of democratic values and human rights.
> - As China and Russia seek to expand their global influence, they are eroding once well-established security norms and increasing the risk of regional conflicts, particularly in the Middle East and East Asia.
> - At the same time, some US allies and partners are seeking greater independence from Washington in response to their perceptions of changing US policies on security and trade and are becoming more open to new bilateral and multilateral partnerships

Open source reporting by the DIA and a wide range of other sources notes that Russian and Chinese exercises in the Pacific and in other military areas have sharply increased over time, particularly since the U.S. announced its new strategy for competing with both powers in 2017 and 2018.

China and Russia "normalized" military relations in 1989 after a long period of tension. Their relations steadily improved after that time. Russia played a key role in selling advanced weapons and military technology to China. Both Russia and China began a regular series of Shanghai Cooperation Organization military exercises called "Peace Mission" in 2004. They have participated in joint naval exercises involving amphibious landings began near Guangdong in 2016, a bilateral exercise that took place in the Baltic in 2017, and China's participation in Russia's annual *Tsentr* exercise in 2019 – an effort which involved some 3,200 Chinese soldiers, more than 20 Chinese aircraft, and H-6K nuclear bombers. Joint exercises also took place in Russia's Eastern Military District as part of the *Vostok-2018* exercise.[28]

China did not react formally to Russia's first proposal for a military alliance in 2014, but China and Russia initiated a formal military cooperation road map for 2017-2020 in June 2017, after a meeting between their current Defense Ministers Chang Wanquan and Sergei Shoigu. The Chinese Ministry of Defense announced on June 29, 2020, that,

> The roadmap makes top-level design and general plan for the military cooperation between China and Russia in 2017-2020. It shows the high level mutual trust and strategic cooperation; it is conducive for both sides to face new threats and challenges in the security field and to jointly safeguard regional peace and stability. In the next step, the two sides will formulate a concrete plan to promote the military cooperation.

Russia announced that, "the top-level talks will focus on the overall partnership and strategic cooperation…and a number of bilateral documents will be signed." The Chinese Ambassador to Russia stated in a newspaper interview on June 27, 2020, that "This is undoubtedly the most important event in bilateral relations this year…this visit is of great significance and it will surely inject a new impetus to the Sino-Russian relations… deepening bilateral relations is a strategic choice for both countries." This rhetoric then exceeded the reality, but it is clear that the new U.S. strategy has to some extent united China and Russia in dealing with the U.S. and its strategic partners, particularly in the Pacific.[29]

Other activities have included joint exercises in Korean and Japanese airspace involving the Russian A-50 airborne early warning and control aircraft, Russian sale of the S-400 air defense system, the Su-27 fighter and key aircraft components and technology, and possible sale of Su-35, and advanced missile defense technology like the S-500 – although China's public approach has remained guarded. An article in the *Moscow Times* on October 23, 2019, announced that,[30]

> Russian President Vladimir Putin's speech at the recent Valdai forum contained two fundamental points regarding China. His official confirmation that Russia is helping China to create a missile launch detection system got more attention, but of no little importance was Putin's assessment of the state of Russian-Chinese relations: "This is an allied relationship in the full sense of a multifaceted strategic partnership."
>
> For a long time after Moscow and Beijing normalized their relationship in 1989, both countries rejected the very idea of alliances as only increasing tensions in various parts of the world. They carefully avoided using the word "ally" in regard to each other until relatively recently, when Russia began using it quite casually…China continues to avoid the term at an official level, preferring official wording about an "all-encompassing partnership and strategic interaction," and insisting that relations with Russia are "the best they have ever been."

Russia and China have increased cooperation in civil areas, like the Russian gas pipeline to China, although China has remained cautious talking about an alliance. An article in the Warsaw Institute Review notes that,[31]

> The June 2019 "Joint Statement on Developing a Comprehensive Partnership of Strategic Coordination for a New Era," states that in developing of their bilateral relations, Russia and China "refuse to forge an alliance, to confront and to act against third countries." It also mentions a "strategic alliance" that does not, however, contain one crucial element of every alliance: the firm commitment to provide military assistance if one of the allies becomes a target. Although it is worth adding that the still valid Article 9 of the 2001 Sino-Russian Treaty of Good-Neighborliness and Friendly Cooperation states: "When a situation arises in which one of the contracting parties deems that peace is being threatened and undermined or its security interests are involved, or when it is confronted with the threat of aggression, the contracting parties shall immediately hold contacts and consultations in order to eliminate such threats."

Nevertheless, there may be serious limits to the extent to which China and Russia will continue to cooperate and avoid competing for influence and control in their border areas, their "near abroad," and in other regions. China's military forces are steadily expanding to match China's growing regional and global interests. China's economy is having a growing impact in Central Asia, in its border area with Russia, and in other areas of Russian national interest such as the Arctic.

Another possible area of competition is the Sino-Russian cooperation in the Arctic. Although they both have expanded joint cooperation to claim natural resources and Northern maritime routes in the race against other Arctic countries, China and Russia are still competing against each other. Russia recently accused one of its Arctic researchers for spying and working with China to give sensitive information regarding underwater navigation.[32] China and Russia share a common interest in competing against the West, but they both have their own inherent self-interests which may intervene with their cooperation with one another.

China may be particularly interested in the Artic because it is developing improved Type 096 combat ships that it may start to deploy in 2022-2023, which are each armed with 24 JL-2 missiles. Launching against targets in the U.S. from the North Pole only involves

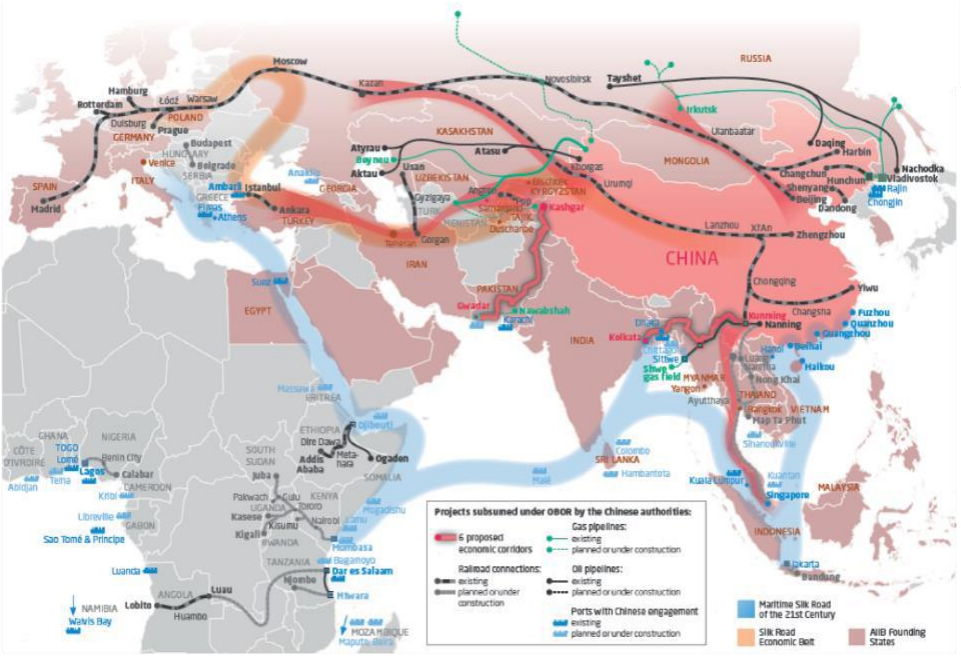
> ranges of 3,400 kilometers versus 11,800 kilometers from Shanghai. It should be noted, however, that if Russia grants China Type-096 missile submarine bases, this would seriously limited U.S. and Japanese capability to monitor Chinese transits or attack such ships.
>
> So far, China and Russia are linked in Central Asia by their participation in the Shanghai Cooperation Organization, have cooperated in dealing with Mongolia, have increased their number of joint exercises, and have increasingly cooperated in competing with the United States. China, however, has already become a far larger power than Russia in every dimension but the military one – and cooperative bodies like the Shanghai Cooperation Organization and a rising number of joint military exercises do not mean that they will not compete in the future.[33]

Given these different key areas of interest – and the fact that their competition is often suddenly reshaped by events outside their control and key areas of interest – U.S., Chinese, and Russian military competition seems likely to continue to focus on strategic partnerships with state and non-state actors; to link military operations to economic activity; and to target gray zone and hybrid operations, third party or low-level uses of force, and irregular or asymmetric war tactics. Success in building up nuclear forces will be marginal at best given the near certainty that the other two powers will also successfully compete.

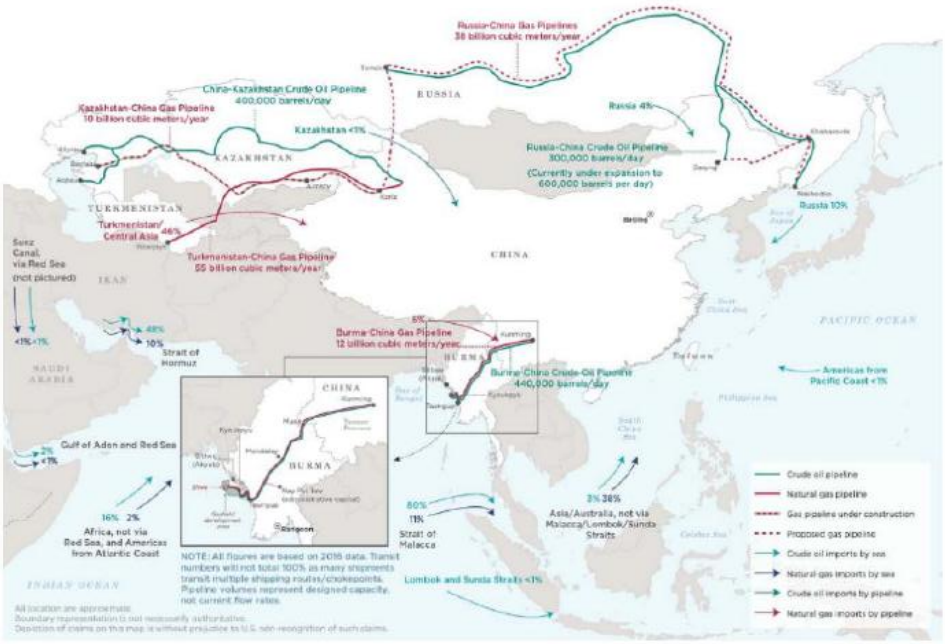
Building up U.S. deterrent and defense capabilities at theater, regional, and command level will remain important, but they will depend heavily on strategic partnerships as well as on military and economic relations with regional powers – rather than the relative size and capability of each nation's army, navy, and air force. It is the expansion of economic power and political influence – linked to these local and regional capabilities for deterrence and the use of force – that will determine success over time.

Chart Eight: China's "Belt and Road" and Broader Areas of Strategic Competition

Emerging Patterns of Economic Power

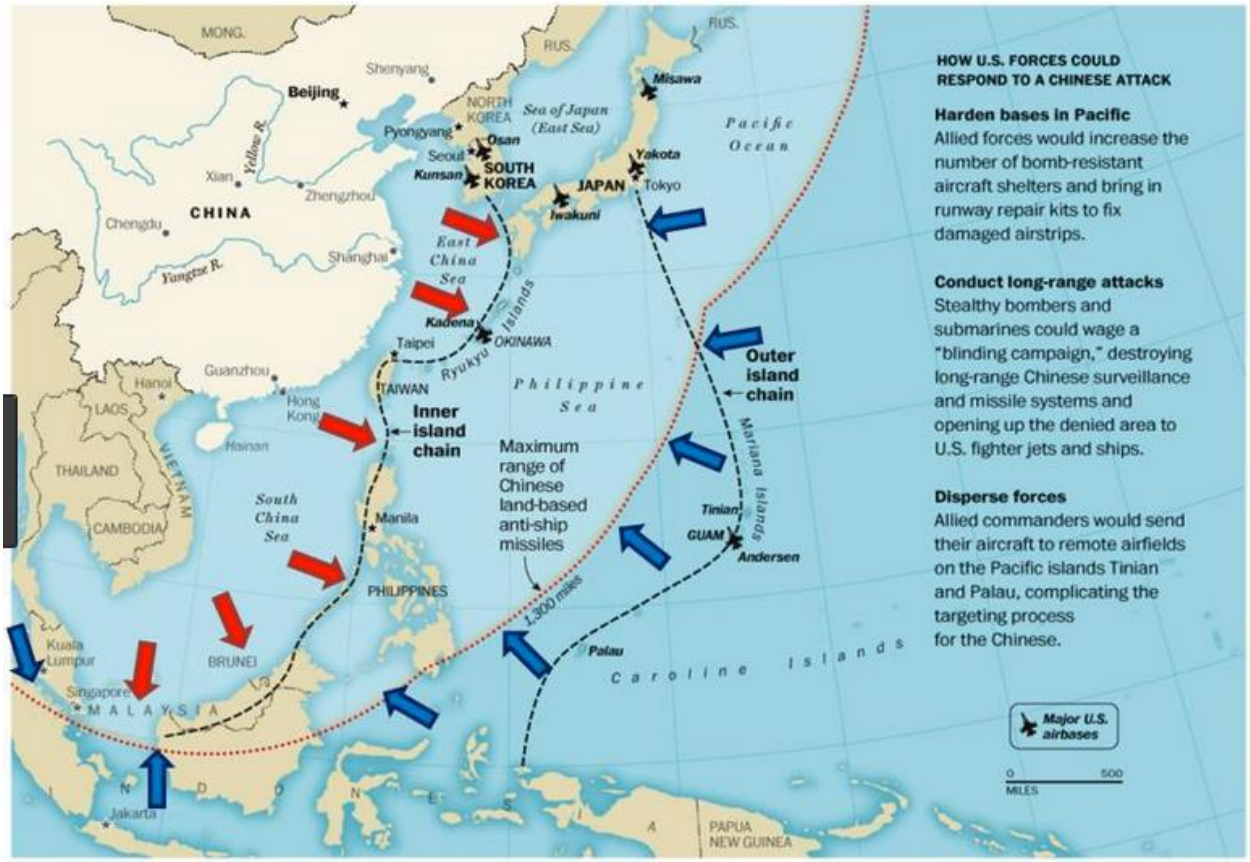


Competition to Reduce it Vulnerability in Petroleum Imports


Russia-China Gas Pipeline
38 billion cubic meters/year
China-Kazakhstan Crude Oil Pipeline
400,000 barrels/day
Kazakhstan-China Gas Pipeline
10 billion cubic meters/year
Russia-China Crude Oil Pipeline
300,000 barrels/day
(Currently under expansion to 600,000 barrels per day)
Turkmenistan/ Central Asia 46%
Turkmenistan-China Gas Pipeline
55 billion cubic meters/year
Burma-China Gas Pipeline
12 billion cubic meters/year
Burma-China Crude Oil Pipeline
440,000 barrels/day
Suez Canal, via Red Sea (not pictured)
Strait of Hormuz
Gulf of Aden and Red Sea
Africa, not via Red Sea, and Americas from Atlantic Coast
Strait of Malacca
Asia/Australia, not via Malacca/Lombok/Sunda Straits
Lombok and Sunda Straits <1%
Crude oil pipeline
Natural gas pipeline
Gas pipeline under construction
Proposed gas pipeline
Crude oil imports by sea
Natural gas imports by sea
Crude oil imports by pipeline
Natural gas imports by pipeline

Source: Brian Wang, MERICS China Monitor, January 20, 2017, https://www.nextbigfuture.com/2017/01/philippines-will-attend-chinas-one-belt.html; and Office of the Secretary of Defense, *Annual Report to Congress Military and Security Developments Involving the People's Republic of China 2017*, May 15, 2018, p. 44, https://www.defense.gov/Portals/1/Documents/pubs/2017_China_Military_Power_Report.PDF.

Chart Nine: Chinese and U.S. Postures in the South China Sea



Source: globalita.com via Ahn Sung Kyoo, Choi Kang, Kweon Eun Yul, "Implications of China's Ballistic Missiles for Korean National Security, *The Asian Institute for Policy Studies*, November 10, 2015, http://en.asaninst.org/contents/implications-of-chinas-ballistic-missiles-for-korean-national-security/

Chart Ten – Part One: Russia's Western Strategic "Near Abroad"

Source: World Map, "Gorky Map," https://www.worldmap1.com/map/gorky-map

Chart Ten – Part Two: Russia's Central Asian and Eastern Strategic "Near Abroad"

Source: "Russia Map and Satellite Image," Geology.com, 2017, https://geology.com/world/russia-satellite-image.shtml.

Chinese and Russian Competition at Gray Area, Hybrid, and Indirect Levels

The first chapter in this analysis has already provided lists of the many areas where China and Russia are competing with the United States in the military sector and in broader civil military campaigns. As the two corresponding chronologies that support this analysis demonstrated, however, there are a wide range of other areas where China and Russia are investing military resources and asserting their power – each of which the U.S. must address.

As the corresponding Burke Chair Chronology on Chinese Gray Zone Activities demonstrates, China is pursuing multiple campaigns that compete with the United States at the military level:

Maritime Campaign

April 12, 2012: Philippines and Chinese naval vessels confront one another off the Scarborough Shoal reef in the South China Sea, which may have significant reserves of oil and gas.

November 2013: China says it has established a new Air Defense Identification Zone (ADIZ) over an area of the East China Sea, covering disputed islands controlled by Japan and a disputed South Korean-controlled rock.

November 2016: PLAAF begins sorties to circumnavigate the island—frequently involving H-6K bomber aircraft flying through the Bashi Channel, south of Taiwan.

These flights serve two roles: they provide training for aircrews in conducting longer-distance sorties for a potential future conflict over Taiwan; and they also serve a propaganda role, with "island encirclement" sorties promoted in state media as part of a psychological warfare campaign to intimidate residents of Taiwan.

February 9-10, 2020: PLA naval and air forces conducted joint drills in waters to the south of Taiwan. PRC state media explicitly linked the drills to the U.S. visit of Taiwan Vice President-elect Lai.

Africa Campaign

February 2017: China opened a military base in Djibouti to monitor exports and imports that pass through the Bab el-Mandeb strait. This base also allows China to maintain a naval force in the regions.

April 2017: China contributed to counterpiracy operation in the Gulf of Aden by deploying its 28th naval escort task forces in the region.

The corresponding Burke Chair Chronology on Russian activities also lists the many Russian campaigns that use gray zone tactics at the military level to compete with the United States:

Broader West/EU Campaign

June 11, 2020: Russian combat jets have flown training missions over the Baltic Sea in parallel with NATO's BALTOPS 2020 drills.

Western Border Campaign

June 5, 2000: Latvia's admission to NATO may prompt the deployment of 300,000 Russian troops in Belarus near the Latvian border.

February 27, 2014: Unmarked "green" armed men invade Crimea and raise Russian flag and Putin gains parliamentary approval to invade Ukraine.

Syrian Campaign

September 2015: Russia carries first airstrike in Syria claiming to target ISIS but attacking mostly anti-Assad rebels.

Sino-Relations Campaign

January 27, 2020: Russia delivers S-400 to China.

Africa Campaign

Russia has deployed 200 mercenaries to Mozambique to fight ISIS.

October 24, 2019: Nigeria signs contract with Russia for 12 Mi-35 helicopter gunships.

September 2019: Moscow backs Hifter's forces in Libya, the Kremlin sees Libya as an ideological platform to discredit the West. While Russia is supporting the warlord Khalifa Hifter, who is also backed by the UAE and Egypt, Turkey is supporting the U.N. installed government in the Libyan capital, Tripoli. Turkey has made investments in Libya for gas drilling rights and a compensation deal before the civil war broke out.

China is pursuing a targeted campaign in the East and South China Sea surrounding its immediate geographical zone. Specifically, China has recently been increasing its pressure on Japan regarding the legitimacy of the Senkaku Islands by continuously deploying patrol ships and harassing Japanese fishing vessels. Meanwhile, the South China Sea offers coveted fisheries and gas reserves – which China, Taiwan, Vietnam, Philippines, Indonesia, Malaysia, and Brunei are all vying to claim.

With China rapidly creating artificial islands while the U.S. houses its navy bases in Japan, Philippines, and Guam, this is a region of high importance as it offers a probability that unforeseen actions could cause China and the United States to stumble into a high-level conflict. Whether an accidental collision occurs between a Chinese and U.S. ship or the U.S. affirms its commitment to aid Taiwan in a dispute with China, the volatile region needs to be given a high priority.

Russia is currently investing a significant amount of private military contractors (PMCs) and resources into Libya. The country has become a regional backwash for Egypt, Turkey, Russia, and a mix of European powers. In bringing up Libya, this analysis does not recommend U.S. intervention, however, it raises the concern that the U.S. has become irrelevant in the matter, especially with Trump's announcement supporting Hifter instead of the UN-backed government.[34] Russia's involvement in Libya – including covertly flying fighter jets and sending in mercenaries – demonstrates a high Russian priority for the future of Libya, as such, it should be carefully observed by the United States.

Russia has also heavily invested in Syria. Despite the variety of actors in the region, the U.S. withdrawal did create a significant power vacuum that Russia and allied Syrian forces filled. Russia is strengthening its ties with the Kurdish SDF forces and creating a major base in eastern Syria. Not only will the U.S. withdrawal affect the power dynamics in Syria, but it will also have ripple effects across the Middle East.

It is important to note that the U.S. does not have the resources or capabilities to give the same level of attention to every geographic area in competing with Russia and China. Fortunately, the U.S. still has far more strategic partners, and Russia and China are also preoccupied with their own geographic priorities, specifically, in their own near abroad. China is worried about its Uighur population and the possible radicalization from any connections forming in Afghanistan or the Middle East. Meanwhile, Russia has feuding neighbors in its backyard as Armenia and Azerbaijan are actively at odds over the Nagorno-Karabakh region.

Tailoring Forces to Meet the Real Needs of Competition with China and Russia: Focusing on the Major U.S. Combatant Commands

The ability to tailor forces to a specific strategic task – including gray area and hybrid operations – and to win without directly fighting – should be the focus of most actual uses of military force in competing with China and Russia. Where direct clashes do occur, the tactical abilities of

relatively small forces will generally determine the outcome. Allied state, enemy state, and non-state actors will evolve to play a critical and sometimes dominant role.

Accordingly, U.S. national security strategy should shift to place a primary focus on gray area and limited joint operations at lower levels of conflict. It should do so by focusing on strengthening the role of U.S. combatant commands rather than focusing on the priorities of each military service. It should focus on meeting U.S. strategic objective in the areas where active competition can take place in spite of the limits imposed by deterrence.

The U.S. has established eleven major commands to deal with such competition on a joint level. Six focus on geographic regions. Each describes its primary mission in different levels of detail, but it is clear that they are the primary commands where real world competition will actually occur, and they should take full account of the role of strategic partners, other countries, and non-state actors

The six key combatant commands include: [35]

- *European Command* which focuses on the Russian threat in Europe and building up NATO capabilities. It executes a full range of multi-domain operations in coordination with allies and partners to support NATO, deter Russia, assist in the defense of Israel, enable global operations, and counter trans-national threats in order to defend the Homeland forward and fortify Euro-Atlantic security. Should deterrence fail, USEUCOM is prepared to fight alongside allies and partners to prevail in any conflict.
- *Indo-Pacific Command* which focuses on China, Asia, and the India Ocean. With allies and partners, the command is committed to enhancing stability in the Asia-Pacific region by promoting security cooperation, encouraging peaceful development, responding to contingencies, deterring aggression, and, when necessary, fighting to win. This approach is based on partnership, presence, and military readiness.
- *Central Command* which focuses on the Middle East, Egypt, Central Asia, and the threat from Iran and extremist groups like ISIS. Its key priorities are deterring Iran, negotiating resolution of the conflict in Afghanistan, maintaining a defeat-ISIS campaign in Syria and Iraq, countering the UAS Threat, and "weaponization" of Internally Displaced Persons (IDPs) and Refugees.
- *Africa Command* which focuses on Africa, building military stability and dealing with extremist threats, and building up strategic partnership with African States. It supports African partner nations in multiple ways by *working with, and through local partners and allies to combat transnational threats and minimize the malign influence of non-African powers.*
- *Northern Command* which focuses on the homeland defense of the United States, North America, and strategic partnerships with Canada and Mexico. USNORTHCOM plans, organizes, and executes homeland defense and civil support missions, but has few permanently assigned forces. The command is assigned forces whenever needed. Its area of operations includes air, land, and sea approaches and encompasses the continental United States, Alaska, Canada, Mexico and the surrounding water out to approximately 500 nautical miles. It also includes the Gulf of Mexico, the Straits of Florida, portions of the Caribbean region to include the Bahamas, Puerto Rico, and the U.S. Virgin Islands. The commander of USNORTHCOM is responsible for theater security cooperation with Canada, Mexico, and the Bahamas.
- *Southern Command* which focuses on the stability of Central and South America, regional strategic partnerships, and the role of outside powers in this region. It provides contingency planning, operations, and security cooperation in its assigned Area of Responsibility which includes Central America, South America, and the Caribbean (except U.S. commonwealths, territories, and possessions). It deters aggression, defeats threats, rapidly responds to crises, and builds regional capacity, working with our allies, partner nations, and U.S. government (USG) team members to enhance security and defend the U.S. homeland and our national interests.

The U.S. also has five functional commands that mix combat roles with the support of the regional commands:[36]

- *Strategic Command* which operates globally to deter and fight nuclear wars and other strategic attacks on the U.S., provides extended deterrence for regional commands, and has both nuclear and long-range conventional strike capabilities. Its mission is to deter strategic attack and employ forces, as directed, to guarantee the security of the U.S. and its allies. The command's assigned responsibilities include strategic deterrence; nuclear operations; space operations; joint electronic spectrum operations; global strike; missile defense; and analysis and targeting.

  USSTRATCOM's forces and capabilities underpin and enable all other Joint Force operations. It combines the synergy of the U.S. legacy nuclear command and control mission with responsibility for space operations, global strike, and global missile defense. This dynamic command gives national leadership a unified resource for greater understanding of specific threats around the world and the means to respond to those threats rapidly. The Global Operations Center is responsible for the global situational awareness of the Commander, USSTRATCOM, and is the mechanism by which the U.S. exercises operational command and control of the Nation's global strategic forces.

- *Space Command* which helps provide deterrence, support U.S. and allied forces with IS&R capabilities, and provide space combat power. USSPACECOM involves four distinct areas of focus:

  1. Deter Aggression/Conflict: USSPACECOM strengthens our national deterrence through the provision of space warfighting options that preserve U.S. and Allied competitive advantage and promote security and stability.
  2. Defend U.S./Allied Interests: If deterrence fails, USSPACECOM, in coordination with allied and joint force commanders and inter-agency partners, will lead the protection and defense of our combined interests in the space domain.
  3. Deliver Space Combat Power: USSPACECOM is committed to preserving and expanding space combat power to enable joint and combined force success.
  4. Develop Ready and Lethal Joint Warfighters: USSPACECOM will improve the development of joint space operations forces and capabilities to enhance space warfighting readiness and lethality while accelerating the integration of space capabilities into other warfighting forces.

- *Cyber Command* which has three main focus areas: Defending U.S. cyber operations, providing cyber support to combatant commanders for execution of their missions around the world, and strengthening U.S. ability to withstand and respond to cyberattack. The Command unifies the direction of cyberspace operations; strengthens DoD cyberspace capabilities; integrates and bolsters DoD's cyber expertise; improves DoD's capabilities to operate resilient, reliable information and communication networks; counter cyberspace threats; and assure access to cyberspace. It is designing the cyber force structure, training requirements and certification standards that will enable the Services to build the cyber force required to execute our assigned missions. The command also works closely with interagency and international partners in executing these critical missions.

- *Special Operations Command* which oversees the special forces components of each service on a joint operations basis and coordinates with civil intelligence operations. It develops and employs fully capable Special Operations Forces to conduct global special operations and activities as part of the Joint Force to support persistent, networked, and distributed Combatant Command operations and campaigns against state and non-state actors to protect and advance U.S. policies and objectives.

- *Transportation Command* which provides a wide range of transportation and supply capabilities for all U.S. military forces. It conducts globally integrated mobility operations, leads the broader Joint Deployment and Distribution Enterprise, and provides enabling capabilities.

It is the joint capabilities of these commands – not the actions of each separate military service – that will determine U.S. success in competing with China and Russia. They will have to deal with most of the real-world military threats from gray area, hybrid warfare, and actual Chinese and Russian military operations. Their expertise will determine U.S. success in developing and managing strategic partnerships, produce much of the specialized intelligence that is required, and provide the military side of integrated approaches to joint civil-and military competition.

The ways in which the U.S. shifts its strategy and national security resources to best address these commands and tasks will determine both its overall success and its relative capability to address the impact of the Coronavirus crisis.

Creating Strategy-Driven Plans, Programs, and Budgets

At the same time, the U.S. clearly needs to make serious efforts the revitalize the U.S. planning, programming, and budgeting system. It needs to develop serious Future Year Defense Plans that are supported by net assessments, and that treat strategic partners as real partners. The U.S. now creates some elements of such efforts by command and deals with given strategic goals, but it does not have an effective system for strategic competition or for implementing its declared national strategy.

The United States, the Department of Defense, and the U.S. intelligence community need to do far more than simply talk about strategy-driven budgets and then fund the shopping lists of the military services. They do need to create effective deterrents to nuclear and large-scale or theater wide conflicts, but effective military competition with China and Russia will require them to focus on gray area, hybrid, and lower levels of military activity. It also requires a focus on joint operations – including civil-military operations – which should be Command and not Service-driven.

This need for reform is particularly important because the U.S. is dealing with a potential peer rival in China, and with an adversary in Russia that has far less economic power and ability to fund military forces but still poses a wide range of separate threats and is a massive nuclear power. As the following chapters show, the U.S. faces a period of sustained long-term strategic military, economic, and civil competition that has no clear end short of a transformation of virtually the entire political, security, and economic system in each state.

Allied Engagement and Open Source Information Warfare

Finally, the U.S. must look beyond its own military capabilities. It cannot withdraw from regional engagements, focus on burden sharing, and concentrate on deterring and fighting higher level conflicts. Most of its gray area and hybrid engagements will involve acting in concert with strategic partners and third countries to counter Chinese and Russian actions, limit their ability to intervene and carry out spoiler operations, and establish local and regional levels of security and stability. In some cases, this will mean acting preemptively. In most cases, it will mean responding quickly and effectively rather than letting a Chinese or Russian initiative gain momentum and effectiveness.

Here, the U.S. needs to make two major changes to its current operations. First, it needs to show consistent support for its strategic partnerships and reestablish a high level of trust in U.S. willingness to act. The lack of U.S. consistency has become a seriously liability, as has the U.S. emphasis on the volume of allied defense spending and arms transfers rather than creating stable and effective military capabilities. The U.S does not need to minimize overseas deployments – it needs to make them effective.

As the data in Chapter VIII of this analysis show (located on pp. 140-142), America's strategic partners already are spending a great deal on defense. NATO Europe, for example, spends far more on military forces than Russia. The data in Chapter VIII show that NATO reports that its European countries spent over $284 billion on military forces, while experts put Russian spending at some $62 billion. Meanwhile, Australian, Japanese, and Korean spending is already a substantial offset

to China. Developing stable and effective common security efforts can make both U.S. and allied spending more effective and almost certainly accomplish far more than random demands that partners spend more without any clear sense of direction or clear pattern of lasting U.S. commitments. How much a country spends is clearly important, but what they can actually buy with that spending is what determines real world military capability.

The second change is to use open source and public reporting to counter Chinese and Russian gray area and hybrid operations. The Department of Defense, the U.S. intelligence community, the U.S. commands, and the U.S. State Department should identify and publicize Chinese and Russian gray area and hybrid activities as soon as they become apparent. They should establish open source reporting that shows the patterns in – and history of – such operations in order to make it impossible for China and Russia to carry them out as covert or indirect efforts.

Here, the work of the DIA in its annual reports on *Chinese Military Power*, the State Department's Global Engagement Center's work in exposing disinformation threats, and the portions of recent speeches by senior Administration officials on Chinese competition (which are cited in Chapter VII of this analysis) are good examples of reporting that needs to be far broader, far more detailed, and far more convincing. The Global Engagement Center's recent *Special Report: Pillars of Russia's Disinformation and Propaganda Ecosystem* is one of the few examples of a meaningful U.S. government effort to seriously address the kind of civil gray area activities that pose a growing threat.[37]

Some aspects of information warfare do involve sensitive sources and methods and do need to be addressed on a more covert basis. In general, however, exposing such Chinese and Russian activities; denying both countries the capability to carry out covert disinformation and cyber campaigns; giving transparency to their more covert multidomain activities; and publicizing arms sales, deployments, and efforts to assert territorial, maritime, and airspace claims are all examples of areas where public exposure can be an effective weapon against Chinese and Russian actions.

While the U.S. did take a clear public position on Chinese activities in the South China Sea in July 2020, it has been far too passive in making such efforts to date. In this case, the natural tendency to classify and to avoid public challenges is counterproductive and deprives the U.S. of a key tool in countering China and Russia. This becomes all too clear the moment one looks for such reporting or attempts to examine the lack of such content in DoD, State, and combatant command websites.

IV. Competing in Military and National Security Spending

The need to improve U.S. military planning, programming, and budgeting is only part of the story. The U.S. has done far too little to examine the comparative structure of U.S., Chinese, and Russian military and national security spending. The next chapter examines the relative size of the entire U.S., Chinese, and Russian economies and their impact on the ability to compete in both civil and military terms – but economic power is only one aspect of such competition.

The size of China and Russia's national economy does have a major impact on each country's military capability and does help determine how much a given country can spend on military forces. However, so does the level and type of control that a national leadership can exercise in allocating economic resources to military competition. Many experts feel that both China and Russia's leaderships have a greater capability to spend in "peacetime" and prolonged periods of competition than the United States, and that Russia and China are actively exploiting this advantage in practice.

This may give China and Russia more capability to sustain current levels of military and national security spending during the Coronavirus crisis. Both regimes are notably less transparent in reporting their expenditures and less sensitive to public demands. In contrast, both the transparency of a democratic system and the perception that the Coronavirus crisis is a civil crisis rather than a gray zone operation or military challenge have already led some U.S. politicians to call for cuts in the FY2021 defense budget.

At the same time, serious questions emerge as to how China and Russia can sustain their current force structures and force modernization efforts with the levels of military spending being made at both the official and outside expert levels in the United States, Europe, and Asia. These estimates indicate that both China and Russia are spending far less than the U.S. and cannot even approach the total spending levels of the U.S. and its strategic partners. They raise critical questions about the validity of such estimates and the need for far more accurate and detailed comparisons of such spending and how they impact the relative capability to compete.

Under Reporting and Underestimation of Chinese and Russian Spending

One key problem is that the U.S. and other governments provide so little official open source data on their estimates of Chinese and Russian spending. The U.S. Defense Intelligence Agency (DIA) does provide some data, but the reporting is not consistent, does not provide any detail on how the total funds are spent, and does not define or provide data that support consistent trend analysis. Aside from that, most other governments focus almost exclusively on force size rather that comparative spending.

A variety of NGOs have produced more detailed estimates, but all recognize that such estimates have major uncertain ties and are not based on access to anything like the resources available to national intelligence communities. Most outside analysts (and national intelligence experts) also believe that China and Russia have long deliberately understated their military spending, particularly in terms of procurement spending and spending on related technology. At the same time, such experts differ over the figures involved, and the range of different estimates is striking. Like the data that compare the total size of national economies in the next chapter, no source is clearly right, and every source that actually makes its own estimates produces different results.

Chart Eleven provides a good example of some of the best NGO estimates. It compares the trends in U.S., Chinese, and Russian spending based on estimates by the Stockholm Institute of International Peace Research Institute (SIPRI) in constant 2018 $US millions. These estimates differ from the official estimates issued by each country and reflect the fact that SIPRI examined the official estimates in detail, tried to make them truly comparable, and attempted to correct for the assumption that China and Russia underreport their national security spending.[38]

If one examines the patterns in the SIPRI estimates of U.S., Chinese, and Russian spending in current $US billions,

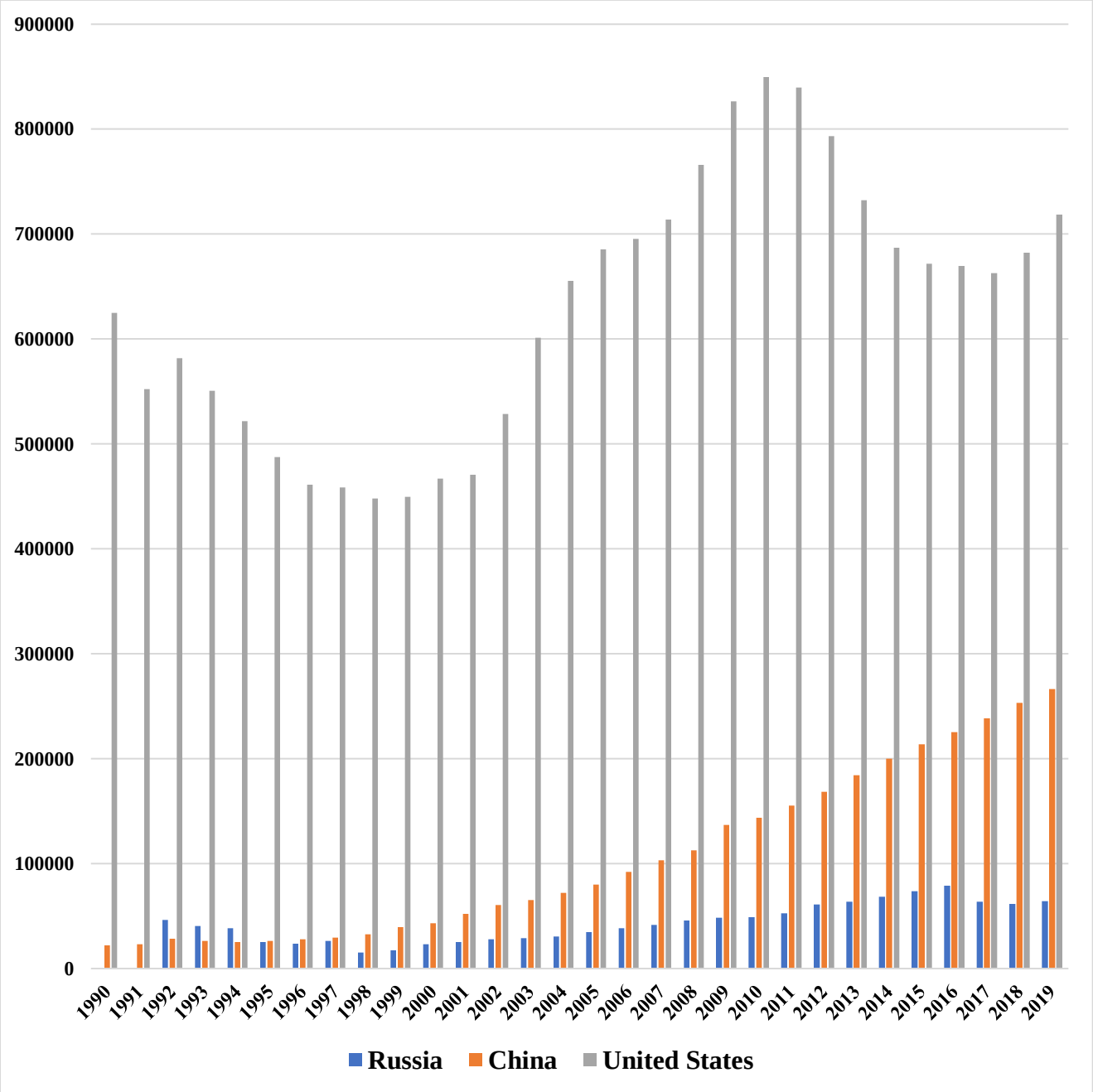
- SIPRI estimates that total Chinese military spending in 2019 in current U.S. dollars to be $261.082 billion. This compares with an estimate of $10.085 billion in 1990, $22.930 billion in 2000, and $115.712 billion in 2010. This is clearly the most massive increase in military spending in modern history.
- SIPRI estimates that total Russian military spending in 2019 in current U.S. dollars to be $65.103 billion. This compares with an estimate of $10.085 billion in 1993 – the first year for which an estimate for Russia is available – $9.228 for 2000, and $58.720 billion for 2010. While SIPIRI does not report spending for the Former Soviet Union (FSU), the defense spending cut from the FSU's total spending to the Russian Federation's total is clearly one of the most massive decreases in military spending in modern history.
- SIPRI estimates that total U.S. military spending in 2019 in current U.S. dollars to be $731.751 billion. This compares with an estimate of $325.129 billion in 1990, $320.086 billion in 2000, and $738.005 billion in 2010. U.S. spending did drop sharply after the end of the Cold War, rose again because of wars in the Gulf and Afghanistan, and is now rising because of spending tied to competition with China and Russia.

Chart Twelve and **Chart Thirteen** show how SIPRI estimates compare with another leading source of military spending estimates. **Chart Twelve** shows that the International Institute of Strategic Studies (IISS) shows that it estimates that China's officially reported military budget was only $181 billion (80% of the IISS estimate of its actual expenditures of $225 billion). Russia's official military budget was only $48.2 billion (78% of expenditures) and that it estimates Russia's actual military expenditures in 2019 to be $61.6 billion. In contrast the U.S. official military budget was $685 billion (94% of expenditures), and its actual military expenditures in 2019 were estimated to be $730 billion.

Chart Thirteen compares the IISS data for the official budgets for 2019, its estimate of actual expenditure, and the SIPRI estimate. The differences are not radical, but it is clear that even the grossest estimates indicate that the data are lacking to make reliable estimates of each nation's spending levels and financial effort to compete.

Chart Eleven: SIPRI Estimates of Russian, U.S., and Chinese Military Spending: 1990-2019

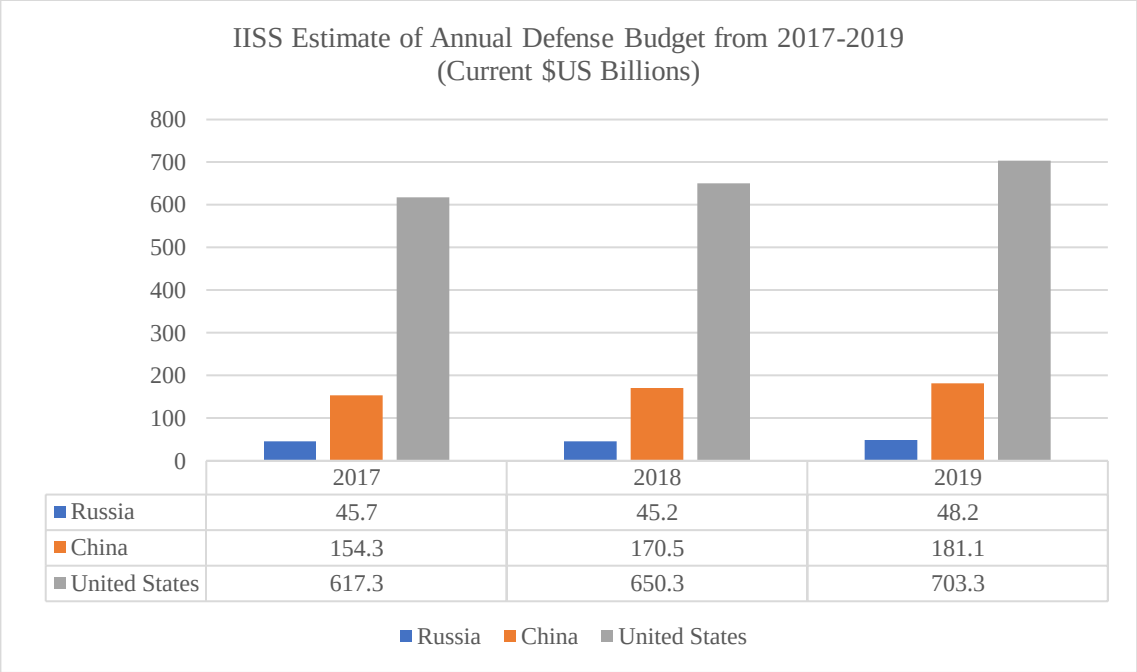
(Constant 2018 $US Millions)



* The 1990 and 1991 data for Russia are missing because no estimate is possible for the FSU/Russia.
Source: SIPRI, https://www.sipri.org/databases/milex.

Chart Twelve: IISS Estimates of Military Spending and Effort 2017-2019

($US Current Billions)



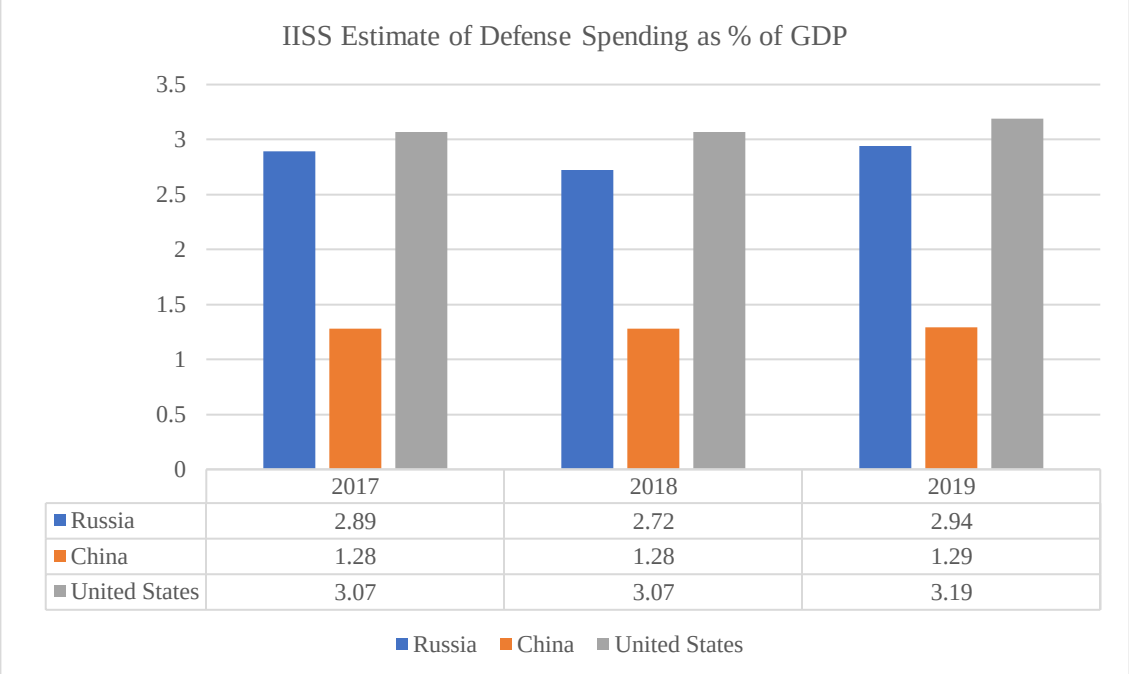
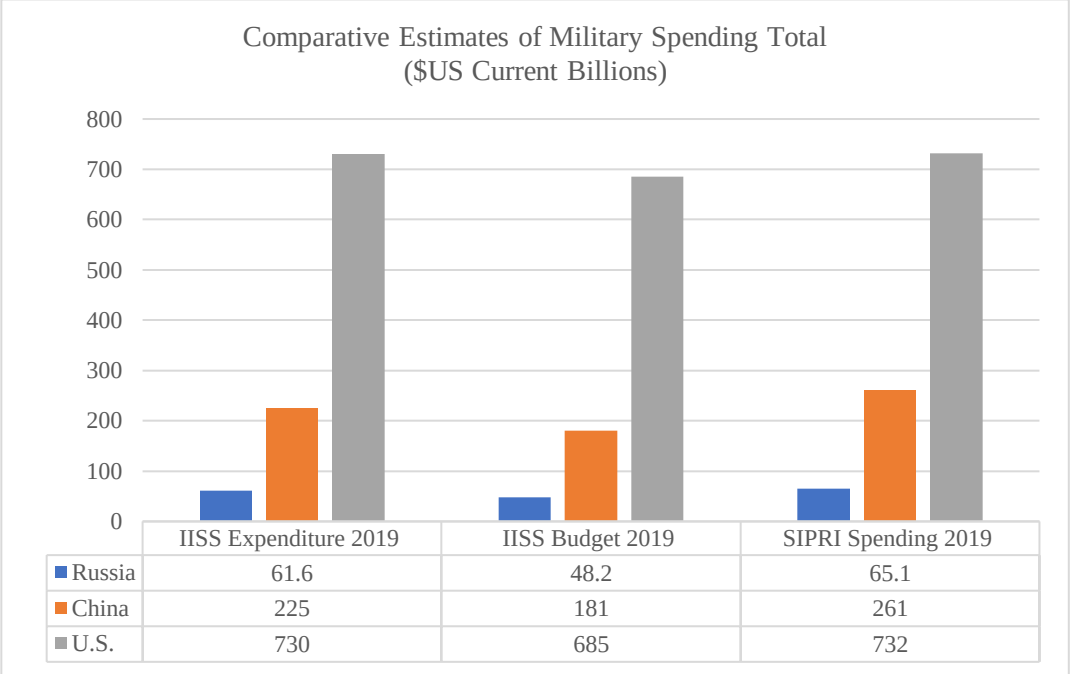
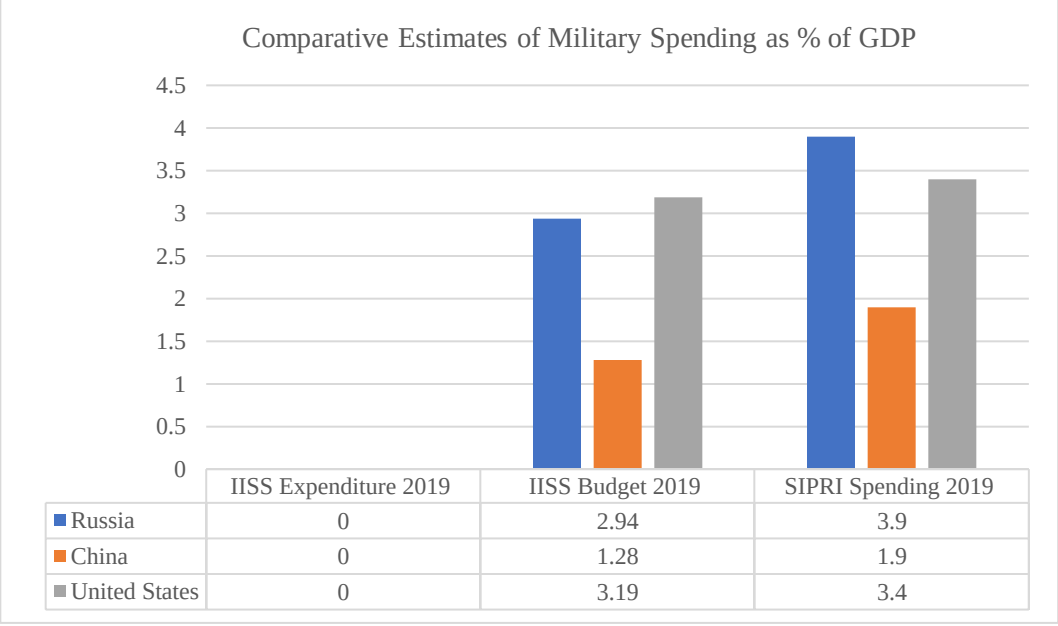


Chart Thirteen: Comparative IISS and SIPIRI Estimates of Total Defense Spending and Percent of GDP in 2019



	IISS Expenditure 2019	IISS Budget 2019	SIPRI Spending 2019
Russia	61.6	48.2	65.1
China	225	181	261
U.S.	730	685	732



	IISS Expenditure 2019	IISS Budget 2019	SIPRI Spending 2019
Russia	0	2.94	3.9
China	0	1.28	1.9
United States	0	3.19	3.4

Source: See Country Sections, IISS, *Military Balance, 2020*, pp. 530-532; SIPRI, "Global military expenditure sees largest annual increase in a decade—says SIPRI—reaching $1917 billion in 2019," April 27, 2019.

Chinese and Russian Under-Reporting of Military Spending and the Burden It Places on the Russian and Chinese Economy

The estimates of the burden that military spending places on the total size of the Russian and Chinese economies as a percent of GDP in **Chart Twelve** and **Chart Thirteen** also seem to sharply under report the real burdens that they place on their respective economies. Russia is almost certainly underreporting the real burden that its military spending places on its economy – particularly its spending on new weaponry, investment in weapons-related research and design, and modernization and repair of existing weaponry. The budget also places major expenditures into future years. As a result, the real annual budget and burden on the GDP may well be 25% to 40% higher than the 2.9% to 3.9% shown in Chart Twelve.

Although Russia was reported to spend about only $60 billion per year on its defense spending in 2019 as shown in Chart Thirteen, Russia's procurement of weapons – such as the development of hypersonic weapons and the S-500 – and support of over a million personnel would cost significantly more. Some sources estimate that if Russian spending is estimated in purchasing power parity (PPP) exchange rates, Russia could have spent close to $150 to $180 annually in the past five years on its defense spending.[39]

Chinese underreporting is almost certainly greater. The IISS estimate of Chinese military spending in 2019 as a percent of GDP in Chart Thirteen is only 1.28% and is drawn from Chinese official reporting. These percentages are almost certainly far too low. The U.S. Department of Defense (DoD) estimated that Chinese spending was at least $250 billion in its FY2021 budget submission, and DIA reporting made it clear that this figure – like the SIPRI estimate of $261 billion – might still be too low because Chinese reporting omits large amounts of R&D, procurement, and other spending.

The Chinese estimates were also planned to remain low in 2020 in the period before the Coronavirus hit. The Chinese budget estimate for 2020 was 1.19 trillion Yuan or $176 billion, and it was stated to be below 2% of the GDP.[40] Nevertheless, the relevant portions of the official Chinese white paper from which they are drawn – in *China's National Defense in a New Era*, *July 2019* – does provide some insights into how China describes its spending efforts and its level of competition in spite of the Coronavirus crisis:

> China attends to both development and security. It is making an integrated effort to build a prosperous country and a strong military, and striving for the coordinated development of national defense and the economy. Following the principle of building the armed forces through diligence and thrift, China takes into consideration the development of the economy and the demands of national defense, decides on the appropriate scale and composition of defense expenditure, and manages and applies these funds in accordance with law.
>
> Since reform and opening-up, China has increased its defense expenditure from a level of sustainability to moderate growth. On the whole, defense expenditure has grown in tandem with the growth of the national economy and government expenditure. Defense expenditure as a percentage of GDP has fallen from a peak of 5.43% in 1979 to 1.26% in 2017. It has remained below 2% for the past three decades. Defense expenditure as a percentage of government expenditure was 17.37% in 1979 and 5.14% in 2017, a drop of more than 12 percentage points. The figures are on a clear downward trend.
>
> In the new era, to keep pace with the country's modernization, China is focusing on building a fortified national defense and a strong military commensurate with the country's international standing, and its national security and development interests. China is striving to narrow the gap between its military and the world's leading militaries, and make up the deficiencies in the military's capabilities in modern warfare. Defense expenditure is growing steadily and the breakdown of spending is being continuously optimized.

> In terms of usage, China's defense expenditure is assigned to three sectors – personnel, training and sustainment, and equipment. Personnel expenses mainly cover the salaries, allowances, food, bedding, clothing, insurance, subsidies and pensions for officers, non-ranking officers, soldiers and contracted civilians, as well as retirees supported from the defense budget. Training and sustainment expenses mainly cover training of the troops, institutional education, construction and maintenance of installations and facilities, and other expenditure on routine consumables. Equipment expenses mainly cover R&D, testing, procurement, repairs, maintenance, transport and the storage of weaponry and equipment. In terms of scope, defense expenditure covers all active forces, reserve forces and militia.
>
> Since 2012, the increase in defense expenditure has been primarily spent for the following purposes:
>
> 1. Adapting to national economic and social development, improving the wellbeing of service personnel, ensuring regular increases in military salaries, and bettering the working, training and living conditions of the troops;
>
> 2. Increasing input in weaponry and equipment development, phasing out the outdated, upgrading the old, and developing and procuring the new, such as aircraft carriers, fighters, missiles and main battle tanks, to steadily modernize weaponry and equipment;
>
> 3. Deepening national defense and military reform, supporting major reforms in military leadership and command systems, force structure and composition, and policies and institutions;
>
> 4. Supporting training in real combat conditions, enhancing strategic-level training, joint training at TCs' level and training of services and arms, and improving the conditions for simulated, networked and force-on-force training; and
>
> 5. Supporting diverse military tasks including the UNPKOs, vessel protection operations, humanitarian assistance operations and disaster relief efforts.
>
> From 2012 to 2017, China's defense expenditure increased from RMB669.192 billion to RMB1,043.237 billion. China's GDP and government expenditure grew at average rates of 9.04% and 10.43% respectively, calculated on the price of the indicated years, while its defense expenditure increased by an average of 9.42%. Defense expenditure accounted for 1.28% of GDP and 5.26% of government expenditure on average. The percentage of China's defense expenditure in GDP remained stable and grew in coordination with the increase of government expenditure.
>
> China applies strict mechanisms of fiscal allocation and budget management on its defense expenditure. It pursues a level of defense spending that is demand-oriented, planning-led and consistent with its capacity. It endeavors to strengthen unified management, coordinate existing and incremental expenditure, gradually practice cost-effectiveness management, and steadily press ahead with reform that is centered on efficacy and efficiency. To improve and strengthen budget management, China's armed forces are extending reform of the centralized collection and payment of military funds, accelerating standardization in relation to defense expenditure, and improving the management of assets and funds.

It is also important to note that some other NGO and think tank estimates of China's military spending also go far higher than those issued by the IISS and SIPIRI. A study by CSIS' *China Power Project*, "What Does China Really Spend on Its Military?" in 2019 highlights these issues. It provides the comparisons of official Chinese and NGO estimates shown in **Chart Fourteen** and **Chart Fifteen**, and notes that,[41]

> There is no universally accepted standard for reporting military spending. While international mechanisms exist, such as the UN Report on Military Expenditures, participation is voluntary. This allows governments to report their expenditure with varying degrees of detail. China joined the UN instrument in 2007, but it remains less transparent than many countries…The Chinese government reports expenditure information annually. In March 2019, China's Ministry of Finance announced a yearly budget of 1.19 trillion yuan ($177.5 billion), marking a 7.5 percent increase from the 2018 budget of 1.11 trillion yuan ($167.4 billion). This follows a recent trend that has seen yearly percent increases in spending fall to single digits.
>
> ...Yet, how much China actually spends on its military is widely debated. The Stockholm International Peace Research Institute (SIPRI) estimates the overall 2018 figure at $250 billion and the International Institute for

> Strategic Studies (IISS) puts the number at $209 billion in 2017. The US Department of Defense (DoD) concludes that China's 2018 defense budget likely exceeded $200 billion.

The *2019 Report to Congress* by the U.S-China Economic and Security Review Commission in November 2019 summarizes the state of China's reporting as follows:[42]

> China's official budget is not transparent. Authoritative observers note that one cannot accept China's official figures at face value due to Beijing's provision of only top-line numbers and omission of major defense-related expenditures, such as research and development and foreign arms purchases… For these reasons, Phillip C. Saunders, director of the National Defense University's Center for the Study of Chinese Military Affairs, estimated in testimony to the Commission that the actual budget is likely $30 billion to $50 billion more than officially reported.
>
> The Department of Defense added an additional 25 percent to China's official budget numbers from 2012 to 2017 in its report to Congress on China's military, and well-regarded think tanks have estimated China's military budget to be a full 40 to 50 percent larger than what the central government officially reports.82 According to the Stockholm International Peace Research Institute, China's estimated overall defense expenditure in 2018 was $250 billion, larger than the combined sums of Saudi Arabia, India, and France (the world's third, fourth, and fifth top spenders, respectively). This figure amounted to 1.9 percent of China's gross domestic product and 5.5 percent of government spending that year.
>
> … Even accepting its official numbers, the growth of China's defense spending for 2019 will exceed its 2019 announced economic growth rate target of 6 to 6.5 percent—a figure some observers believe is itself overstated. Whether calculated by official or estimated growth rates, China's defense spending has outpaced overall economic growth most years since General Secretary Xi assumed power—a remarkable fact reflecting the high priority Beijing assigns to its military in the face of other demands on government resources.

There are also experts who feel China's actual spending levels are far higher than those made by SIPRI, the IISS, and the DIA. An estimate by Frederico Bartels of the Heritage Foundation calculates Chinese spending in PPP terms including all of the categories that are missing from Chinese estimates, and he puts the total at 87% of U.S. spending.[43] These higher estimates should not be disregarded because they depart from other estimates. U.S experts consistently underestimated the actual level of Russian spending throughout the Cold War, and the U.S. sharply increased its percent estimates of the size of the Former Soviet Union's military efforts after its collapse when the full scale of the FSU's effort became clear.

Making better estimates of comparative military spending that are directly comparable is yet another critical area for better U.S. analysis, particularly given the different pressures the Coronavirus crisis puts on the U.S. relative to China and Russia. There are few studies that attempt to develop meaningful comparisons of direct and indirect national security spending by the United States, China, and Russia. Past open source U.S. official reporting on military spending and economic impacts on security have become increasingly erratic, and documents like the State Department *World Military Expenditures and Arms Transfers* have been reduced to a sporadic computer database. There is virtually no detailed open source assessment of the relative size and efficiency of the military and national security structures and budgets that shape U.S., Russian, and Chinese competition.

Chart Fourteen: Chinese Official Reporting on Its Military Spending Effort

Figure 3 China's Defense Expenditure as a Percentage of Its GDP (1979-2017) (%)

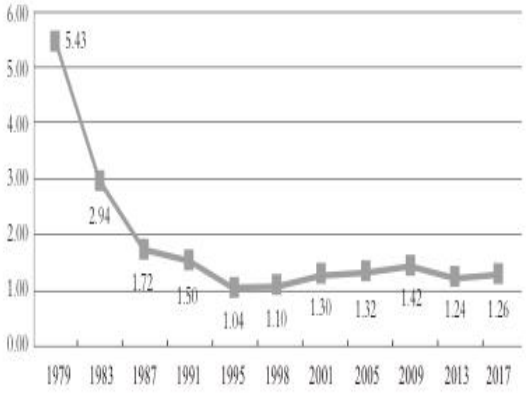


Figure 4 China's Defense Expenditure as a Percentage of Its Government Expenditure (1979-2017) (%)

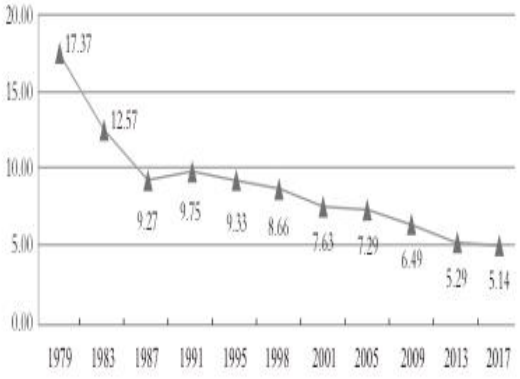
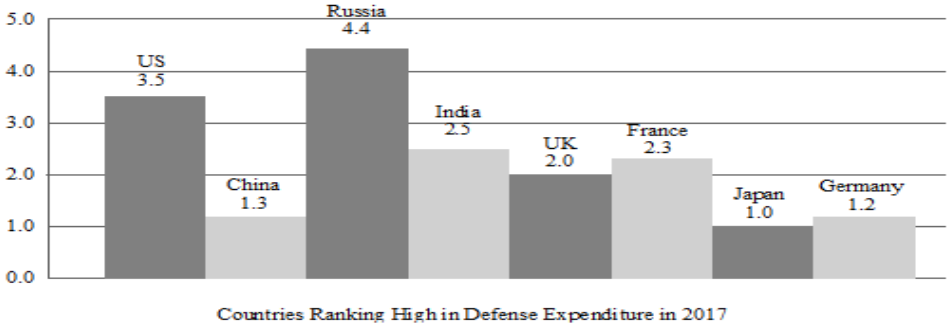
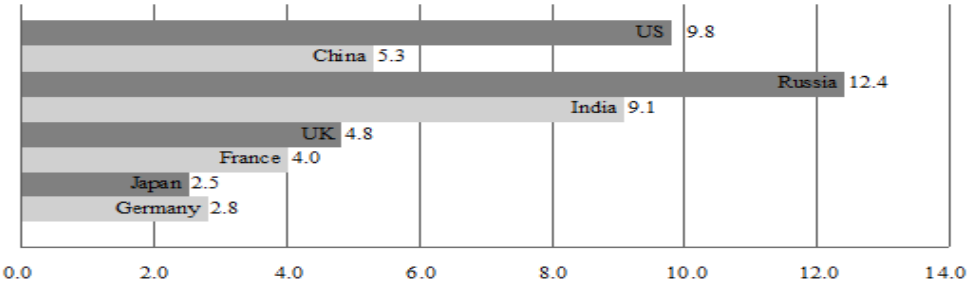


Figure 5 Average Ratio of Defense Expenditur e to GDP by Country (2012-2017) (%)



Countries Ranking High in Defense Expenditure in 2017

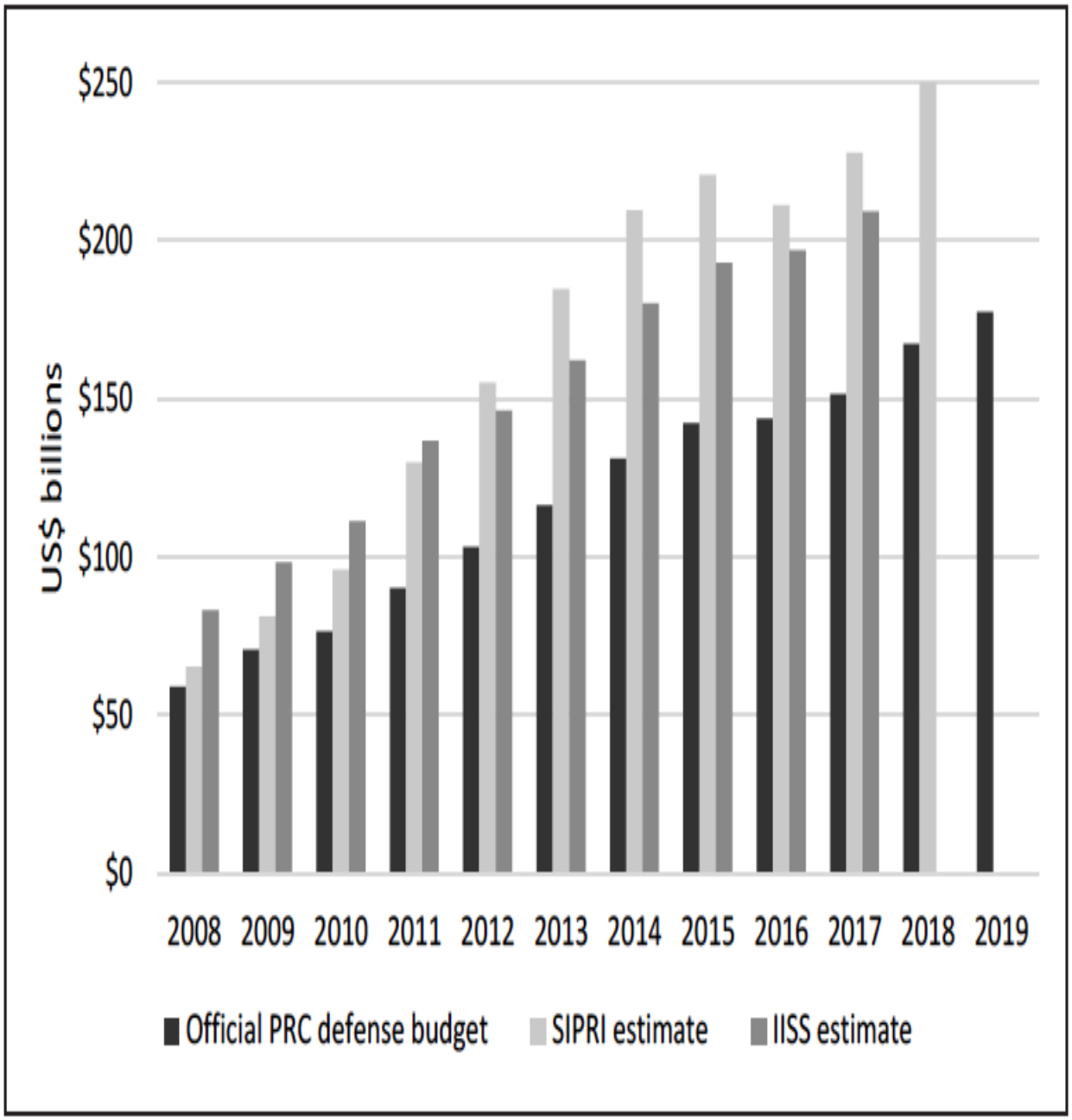
Figure 6 Average Ratio of Defense Expenditur e to Government Expenditure by Country (2012-2017) (%)



Countries Ranking High in Defense Expenditure in 2017

Source: Adapted from *China's National Defense in a New Era*, July 2019, http://www.xinhuanet.com/english/download/whitepaperonnationaldefenseinnewera.doc

Chart Fifteen: Chinese Official Reporting on Its Military Spending versus SIPRI and IISS Estimates: 2008-2019



Note: All values in nominal U.S. dollars. SIPRI stands for Stockholm International Peace Research Institute. IISS stands for International Institute for Strategic Studies. Estimated figures from IISS for 2018 and 2019 and from SIPRI for 2019 are not available. Adapted from *China's National Defense in a New Era*, July 2019, http://www.xinhuanet.com/english/download/whitepaperonnationaldefenseinnewera.doc

Source: Center for Strategic and International Studies China Power Project, "What Does China Really Spend on Its Military?" 2019; Members of Center for Strategic and International Studies China Power Project, interview with Commission staff, October 15, 2019.

Measuring the Quality and Efficiency of U.S. Defense Spending

Total spending is also only one critical question that needs to be addressed in improving U.S. strategy and capability to compete. It is probably even more important to be able to understand the relative efficiency in which each power uses its defense resources. Unfortunately, there has been remarkably little to no available net assessments on how well the U.S., China, and Russia spend their money or on how efficient their systems are in supporting given aspects of military forces and competition in national security.

It is far from clear which nation spends most efficiently. The annual Congressional Budget Office (CBO) studies of the trends and cost escalation in U.S. defense spending are not reassuring in indicating how well the U.S. competes. Neither are the many Inspector General, General Accountability Office, or Congressional studies on the defense spending in key areas.

The U.S. Army's failures in its Future Combat Systems effort, the U.S. Navy's cost escalation and delays in ship building, the U.S. Air Force's problems with the F-22 and F-35, and the long past delays in key areas of the Marine Corps modernizations raise questions as well. So do the major rises in operation and maintenance (O&M) and contracting costs, as well as the specialized areas like military health care and Veteran's programs.

The lack of any clear effort to go beyond the endless annual claims by the Department of Defense (DoD) that it is again reorganizing, becoming more inefficient, and reducing costs – but then also asking for yet another increase in defense spending – are not a substitute for comparative analysis.

Linking Defense Spending to Economic Competition and Its Impact on Military and Strategic Competition

Much depends on how well each state uses all its military and economic assets to compete. The two chronologies that support this analysis show that Russia and China have long used their economic power to directly serve their strategic interests while the U.S. has rarely done so. In most cases, the Coronavirus crisis is also likely to make China and Russia put more emphasis on such forms of competition, not hinder their ability.

There has never been a clear separation between Chinese and Russian civil economics and investments from their military spending and development, and it is scarcely surprising that many aspects of Chinese and Russian economic activity support their regional military efforts. China's "Belt and Road" (BRI) efforts are a good example. Both China's strategic position and its economy benefit from many BRI activities ranging from new Indian Ocean ports to building up a major business, construction, or infrastructure presence in a given country that can provide China strategic influence as well as economic opportunities.

The same is true of China's role in the Shanghai Cooperation Council in Central Asia, its growing economic role in South Korea and Taiwan, its creation of port facilities (and also a separate naval base) in Djibouti, its "string of pearls" port facilities, its role in the Trans-Pacific Partnership (TPP), its investments in Iran and Cambodia, and its growing economic links to Australia.

China's expanding economic power is often tied to Chinese efforts to increase its strategic influence and leverage. In many cases – like arms transfers, loans, ports, major infrastructure projects, and major local investments – it has increased its strategic profile simply through its growing global economic role and presence.

Russia may now be a much smaller economic power than China, but it too has focused on spending in areas that support gray area, hybrid, and spoiler operations. It has shown that it can combine efforts to support both its military and economic goals by the way it exports gas and oil, ties aid to investments in developing states, and shapes its trade patterns and restrictions. Arms sales and selling military production equipment have become tools for expanding civil sales and vice versa. Russia has expanded its use of private military companies, specifically the Wagner Group, to countries in Africa – such as the Central African Republic and Libya – while also signing exclusive mining deals with them.

Focusing on the Military Impact of the Chinese and Russian Civil Economies

As the following Chapters in this report show, the U.S. not only needs to cope with current military threats and military spending, but with the impact of Chinese and Russian economic development and military spending over time. It also needs to deal with the fact that China, and to a lesser extent Russia, are competing on a civil level as well. The U.S faces at least as serious of a set of civil challenges as it does military ones, and it cannot develop an effective "whole of government approach" unless it fixes both its present military and civil approaches to civil-military competition.

At the same time, Russia has used its economic power, role as a natural gas exporter, and trade restrictions to increase its pressure on outside states. Its other efforts in the "near abroad of NATO" – the NATO countries close to Russia's borders – have also mixed politics and economics with intimidation, support of Russian minorities, and the use of information and covert political warfare.

Russia and China have used their economic activity to create other forms of strategic influence and dependence over other states. Although Russia may not gain a direct military advantage when it creates a significant gas pipeline bypassing Eastern Europe, and China may not collect an apparent gain when it fronts a zero-interest loan in Africa, these tactics are key parts of gray-zone warfare that can be leveraged and used as needed.

Meanwhile, the United States government has focused far too heavily on a single economic tool in linking economics to its military competition with China and Russia: *sanctions*. These are now being applied primarily to Russia, Iran, and North Korea. The real-world impact on Russia and China is limited. Although the U.S. does not provide meaningful foreign aid to China or Russia, it does offer help to some other countries in ways that affect Chinese and Russian military and strategic interests. Moreover, U.S. tariffs and "trade wars" have been targeted largely to only support U.S. civil economic interests.

It is time to examine a wider range of options, and ones that have more direct military impacts. Arms transfers and military train and assist programs are just two examples.

V. Economic Competition: Military Competition is Only Half the Challenge

> "All men can see these tactics whereby I conquer, but what none can see is the strategy out of which victory is evolved…When the enemy is relaxed, make them toil. When full, starve them. When settled, make them move." ― Sun Tzu, The Art of War

There is no easy way to transition from a focus on military competition to one competition with China and Russia in terms of economic and civil power. As important as the issues relating to military competition are, however, they are only half the challenge in redefining U.S. strategic competition with China and Russia. The end of the Cold War may have reduced the economic and civil threats from Russia, but this new era has scarcely eliminated them. China's rise as the world's second leading major power has already created challenges as great as the ones that were posed by the Former Soviet Union (FSU).

For all the recent hopes that the world is evolving toward some form of stable "globalism" during the late 1990s and early 2000s, the world's three major powers are now committed to competing at political, diplomatic, and economic levels as well as military ones, and they will adapt this competition as necessary to deal with the ongoing impact of the Coronavirus crisis.

Moreover, the aspects of this competition that shape the size and nature of each nation's economy not only are critical in shaping their individual capability to fund military forces and support their strategic partners, but they are even more important in shaping the capability to compete at the civil level and in the high technology areas that shape both overall economic growth and military areas like multi-domain warfare.

This is not simply a matter of the size of each state economy. As Howard J. Shatz notes in a RAND study of the *Economic Competition in the 21st Century*,[44]

> Countries conduct economic competition in a number of different ways, beyond ensuring their economies are "competitive." They compete for export markets and inward foreign direct investment (FDI), echoing eighteenth-century mercantilism in which trade surpluses were seen as a goal to foster economic growth and state power. Often, they do so through subsidized finance or through other forms of direct assistance. They also compete to develop leadership in technology-intensive industries. After the fact, it is possible to see which countries host the dominant firms in a technology area and where the most technologically advanced products come from. But even more than with exports or investment, tracing the pathway from government action to technological dominance is difficult, and policies to boost technology-intensive industries often fare poorly or do not improve the broader economy. Finally, countries compete to make sure standards that are favorable to their industries are adopted more widely. These may come in the form of regulatory requirements or technical standards.
>
> The final arbiter of technology leadership or successful competition in the global economy remains the ability of a country to foster domestic economic growth with a level of inequality that is politically tolerable. Despite a great focus on international competition, domestic economic policies regarding such mundane matters as efficient government spending, effective training programs, and sensible regulatory regimes retain primacy in affecting economic power and success.
>
> … Economics as a field of competition involves not only the search for growth and markets. It also includes using economic tools to further geopolitical goals—competition as action. These uses have been come to be known by some analysts and policymakers as *geoeconomics*. This is not the use of economic tools to improve a nation's economy. Rather, it is the use of economic instruments to support other goals, including defending national interests and producing more favorable political, diplomatic, or security outcomes.
>
> In the area of punishment, these tools include the use of sanctions to cause policy change, destabilize a government, stop a country from acting, or send a message to other nations or the public. Such actions can

include a broad variety of sanctions on trade, investment, finance, and people. At a more aggressive level, using economic actions to coerce can accumulate to become economic warfare. The line between the two is not distinct, but economic warfare would include economic actions to achieve not just economic but military and geopolitical goals. Although the goals of economic warfare are different from the goals of economic competition, many of the tools are the same. Economic warfare can include trade and investment limits, travel bans, and in the case of actions instituted by the United States, limits on the use of the U.S. financial system. But economic warfare can go well beyond these tools and include blockades of ports, bombing of factories, or cyberattacks on political or military targets, and it may include covert actions.

Economic tools can also be used to reward. Countries and institutions around the world provide more than $225 billion in official development assistance, including grants or loans on concessional financial terms offered by governments to promote economic development or welfare. Such aid can be helpful in achieving those goals. Although generally frowned on by aid advocates and development officials, aid has always had foreign policy goals that can be viewed through the lens of strategic competition. Goals have included winning allegiance to and obtaining favorable treatment for the donor country. In addition, despite the apparent generosity, aid can have negative consequences, both for development and in achieving political goals.

…A final major area in which countries compete is in setting the rules under which they compete economically, specifically, the rules of the global trade, investment, and finance system. These rules can also have geopolitical effects in the way they create norms of behavior and how they influence political systems. The rules-based international economic system established following World War II has rested on three main pillars. The first is multilateral trade liberalization through what was originally the General Agreement on Tariffs and Trade and is now the World Trade Organization. The second is assistance originally for balance-of-payments adjustments and later for all manner of financial and budget crises under the International Monetary Fund. The third is economic development under the World Bank and regional development banks.

These pillars have supported two simple ideas that have been implemented slowly: International trade and investment should be free among nations, with benefits that are accorded to one partner accorded to all. Furthermore, businesses of one nation operating in another, either through trade or investment, should be afforded the same treatment as the local businesses in the nation in which they are operating.

As with many other aspects of global economics, the effect of China's growing role in the world economy has the potential to change the institutional foundations of international trade and investment. The most contentious area affecting the system is China's efforts to make international institutions accommodate its state-led economic system on an equal basis to market economies. Gaining greater acceptance for state-led economies within the international system could have strongly negative effects on that system.

Beyond the well-being of a country's population and growth of a country's economy and production capacity, economic competition is relevant to the armed forces. The wealth and output generated by economic activity leads directly to the ability of a nation to fund the personnel, equipment, and operations of the armed forces and the technological development that can lead to more effective weapons and operations. To the extent that economic competition.

However defined, leads to a larger economy, economic competition can enable larger, more powerful armed forces and underpin increased chances of victory in wartime.

The changing nature of defense procurement also demonstrates the links between economic competition and the armed forces. Reliance on commercial off-the-shelf technology has increased, not only because much of the innovation is taking place in commercial activities but also because buying from the commercial market (or modifying commercial products) can be cheaper than buying custom-made technology. A stronger economy can fund not only the research, development, and manufacturing activities that result in new technology, but the education and training that provide the workforce and knowledge for the development of that technology.

One other factor that makes economic competition highly relevant for the armed forces is that international security interests may follow international economic interests. This is particularly a concern with China's growth and internationalization. Already, China is the leading trade partner of many countries. As trade and financial orientation changes, political orientation could follow. Additionally, China may want to expand its

> military presence to protect its investments and Chinese nationals working throughout the world. Such activities are not yet a security challenge for the United States but may become so.

China – and a to a lesser extent Russia – have made these areas as critical a set of challenges to the United States and its strategic partners as their military challenges As has been touched upon earlier in this analysis, there are critical differences between the economies of the United States, China, and Russia in winning this competition over time. The United States has long had the advantage in economic power and technology. However, its political and economic systems broadly separate civil and military power, and its capitalism and democracy limit the U.S. use of state control in expanding and allocating economic power.

The state-driven systems of the central governments in China and Russia are a different story. In both countries, supreme political power is placed in the hands of its leadership with only limited checks and balances. The state shapes the major policies and programs that affect every major aspect of its economy just as it does to the nation's national security policies and to the actions of its military forces.

In practice, the relative integration of civil and military policy and action is limited by each state's ability to plan and administer, but it is now clear that Chinese and Russian operations are far more integrated than that of the United States – where military and civil/economic policy are normally kept separate and where the federal government still lacks a coherent structure for planning even the defense industrial sector.

Comparing Different Ways of Estimating Total Economic Power

One key indicator of the lack of U.S. focus on the economic dimension in both the military and civil competition with China and Russia has been the lack of attention to how the total growth of each nation's economy is affecting its ability to compete at *both the military and civil levels* – and also the international perceptions of American capability to compete. As the following analysis shows, there is no simple way to compare economic power or link such comparisons to U.S., Chinese, and Russian ability to compete at both the civil and military levels – a problem that can only grow worse with the massive economic disruptions caused by the Coronavirus crisis.

Chart Sixteen shows estimates on the trends in the total size of each nation's economy using several different methodologies that the World Bank uses to estimate the trends in U.S., Chinese, and Russian Gross National Income (GNI) during 2000-2018. They do not agree in detail on whether the U.S. or China now has the lead, but all the comparisons indicate that China is catching up with – or overtaking – the United States in several key metrics. They also agree that Russia increasingly lags behind. It is equally clear from the more detailed analysis that follows, that this reflects a broad pattern in many other measures of economic capability and strength – one that seems likely to remain unchanged by the Coronavirus crisis.

Even a brief review on the difference between these comparisons of total economic power also warns that there are serious difficulties in making even basic comparisons of just one aspect of the economic ability to compete. For example, the comparison in current dollars generally shows the highest differences between countries over time. Comparisons in constant dollars – which try to keep all of the cost data truly comparable from year-to-year – show much smaller rates of relative growth, but the comparison still creates major problems in trying to define "constant" for different economies and currencies.

There also are many different methods that can be used to measure the total size of a given economy, and any effort to measure the rate of competition must pay close attention to these differences as well. The IMF provides the following summary analysis of the major differences in methodology for making the comparisons of total U.S., Chinese, and Russian economic power – as well as a warning that no choice is necessarily right:[45]

> One of the two main methods of conversion uses market exchange rates—the rate prevailing in the foreign exchange market (using either the rate at the end of the period or an average over the period). The other approach uses the purchasing power parity (PPP) exchange rate—the rate at which the currency of one country would have to be converted into that of another country to buy the same amount of goods and services in each country.
>
> **PPP versus market rates**
>
> So which method is better? The appropriate way to aggregate economic data across countries depends on the issue being considered. *Market exchange rates are the logical choice when financial flows are involved.* For example, the current account balance—which measures the funds coming into and going out of a country—represents a flow of financial resources across countries. It is appropriate to use the market exchange rate to convert these flows into dollars when aggregating across regions or calculating the global current account discrepancy. But *for other variables, the decision is less clear cut.* Take real GDP growth. International organizations use different approaches. The World Bank uses market-based rates to determine the weights in its regional and global aggregations of real GDP, whereas the IMF and the Organization for Economic Cooperation and Development use weights based on PPP rates (although the IMF also publishes a global growth aggregate based on market rates in the WEO). Each methodology has its advantages and disadvantages.
>
> *Advantages of PPP:* A main one is that PPP exchange rates are relatively stable over time. By contrast, market rates are more volatile, and using them could produce quite large swings in aggregate measures of growth even when growth rates in individual countries are stable. Another drawback of market-based rates is that they are relevant only for internationally traded goods. Nontraded goods and services tend to be cheaper in low-income than in high-income countries. A haircut in New York is more expensive than in Lima; the price of a taxi ride of the same distance is higher in Paris than in Tunis; and a ticket to a cricket game costs more in London than in Lahore. Indeed, because wages tend to be lower in poorer countries, and services are often relatively labor intensive, the price of a haircut in Lima is likely to be cheaper than in New York even when the cost of making tradable goods, such as machinery, is the same in both countries. Any analysis that fails to take into account these differences in the prices of nontraded goods across countries will underestimate the purchasing power of consumers in emerging market and developing countries and, consequently, their overall welfare. For this reason, PPP is generally regarded as a better measure of overall well-being.
>
> *Drawbacks of PPP:* The biggest one is that PPP is harder to measure than market-based rates. The ICP is a huge statistical undertaking, and new price comparisons are available only at infrequent intervals. Methodological questions have also been raised about earlier surveys. Between survey dates, the PPP rates must be estimated, which can introduce inaccuracies into the measurement. Also, the ICP does not cover all countries, which means that data for missing countries must be estimated.
>
> **Does it make a difference?**
>
> It depends. There is a large gap between market- and PPP-based rates in emerging market and developing countries, for most of which the ratio of the market and PPP U.S. dollar exchange rate is between 2 and 4. But for advanced economies, the market and PPP rates tend to be much closer. As a result, developing countries get a much higher weight in aggregations that use PPP exchange rates than they do using market exchange rates. The weights of China and India in the world economy are far greater using PPP exchange rates than market-based weights.
>
> Thus, the choice of weights makes a big difference in calculations of global growth, but little difference to estimates of aggregate growth in advanced economies. The per capita income gap between the richest and poorest countries is modestly reduced under PPP exchange rates (although it remains exceptionally

large), and some countries jump up or down the income scale depending on the exchange rate conversion used.

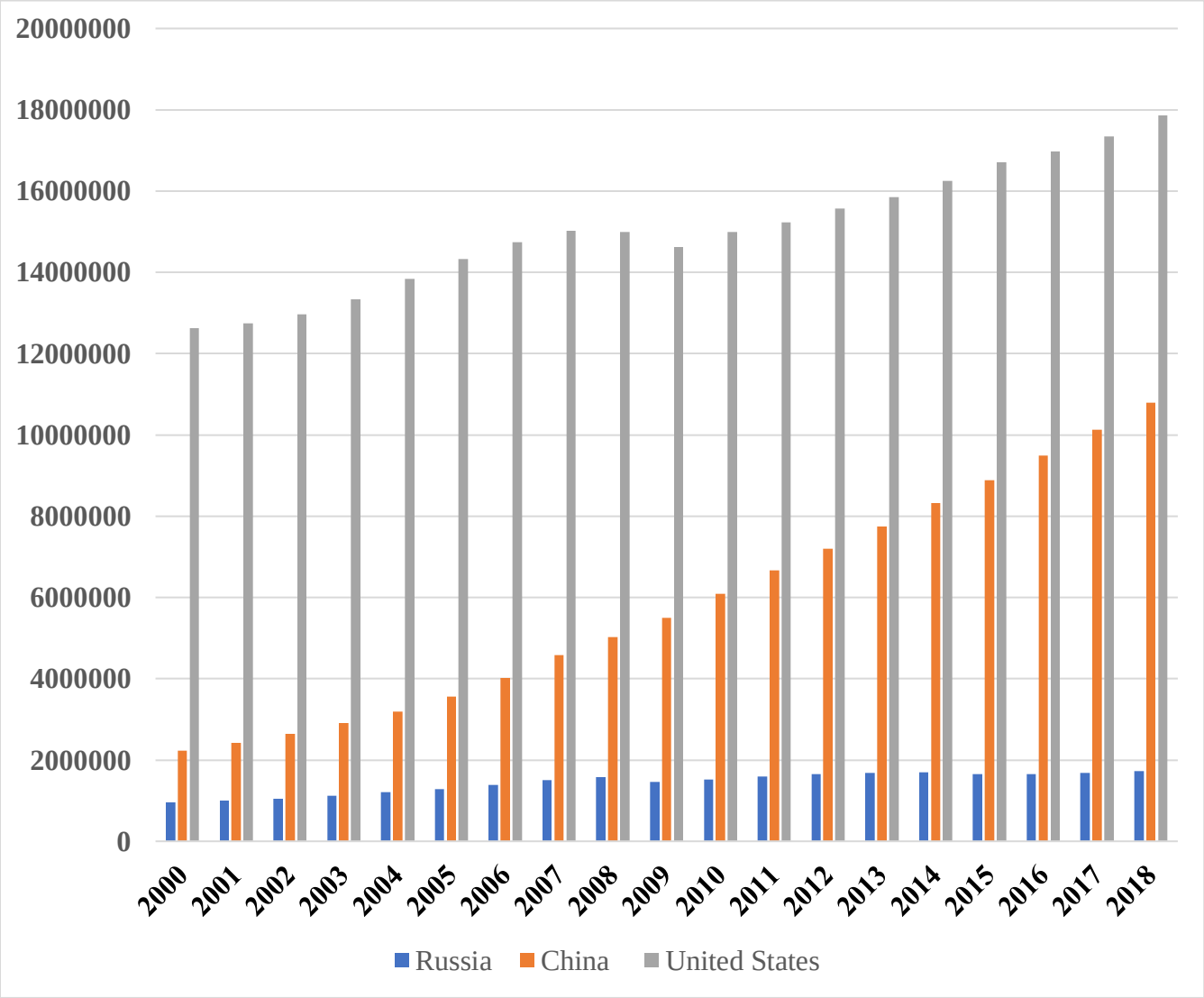
The various estimates in **Chart Sixteen** show just how critical of a choice a given methodology is to understanding the broadest patterns in the economic competition between the three powers. However, finding the best way to measure the ability to compete has received surprisingly little open source analysis that looks for the best way to make such comparisons for strategic purposes.

Despite the difficulties that arise when trying to produce a fair and accurate comparison, the data does provide for meaningful analysis:

- **Part One** of Chart Sixteen compares the gross domestic product (GDP) of the United States, Russia, and China in constant 2010 $US millions from 2000-2018. When using the market exchange rate, the country with the highest national output within its borders is the United States, followed by China, and then Russia. The chart indicates a trend that the GDP of the U.S. and China have both been steadily growing while the GDP of Russia remains relatively stagnant.
- **Part Two** of Chart Sixteen compares the GDP of the United States, Russia, and China using the purchasing power parity (PPP) exchange rate in constant 2011 $ international millions from 2000-2018. China has the highest GDP in PPP due to its low labor costs and wages that keeps prices down. As a result, people can buy more of a certain good in China compared to the United States or Russia. The trend demonstrates that while both the U.S. and China have growing GDPs in PPP (in which China surpassed the United States in 2014), Russia's GDP in PPP has remained relatively stagnant.
- **Part Three** of Chart Sixteen compares the gross national income (GNI) of the United States, Russia, and China in constant 2010 $US millions from 2000-2018. When using the market exchange rate, once again the United States has the highest national output from both domestic production and income from abroad – followed by China, and then Russia. The chart also shows a similar trend from Part One, which indicates that the GNI of the U.S. and China have both been increasing while the GNI of Russia remains stagnant.
- **Part Four** of Chart Sixteen compares the GNI of the United States, Russia, and China using the purchasing power parity (PPP) exchange rate in constant 2011 $ intentional millions from 2000-2018. Similar to the chart in Part Two, China ranks first in highest GNI using PPP due to its low labor costs and wages that keep prices down and allow people to buy more of a certain good in China – while the U.S. ranks second, and Russia ranks third. The trend also demonstrates that both the GNI in PPP of China and the United States is increasing (in which China again surpassed the United States in 2014) while the GNI of Russia has remained stagnant.
- **Part Five** of Chart Sixteen compares the GNI of the United States, Russia, and China using the World Bank's Atlas Method in current $US millions from 2000-2018. The Atlas Method converts the local currency unit (LCU) into current $US using a variety of variables to compare the size of economies in different countries based on their GNI. Even with the Atlas Method, the trend is similar to the comparison of GNI using constant 2010 $US in Part Three where the United States ranks first, followed by China, and then Russia.

Chart Sixteen – Part One: Comparing GDP of Russia, China, and the United States by Official Exchange Rate from 2000-2018

(in Constant 2010 $US Millions)

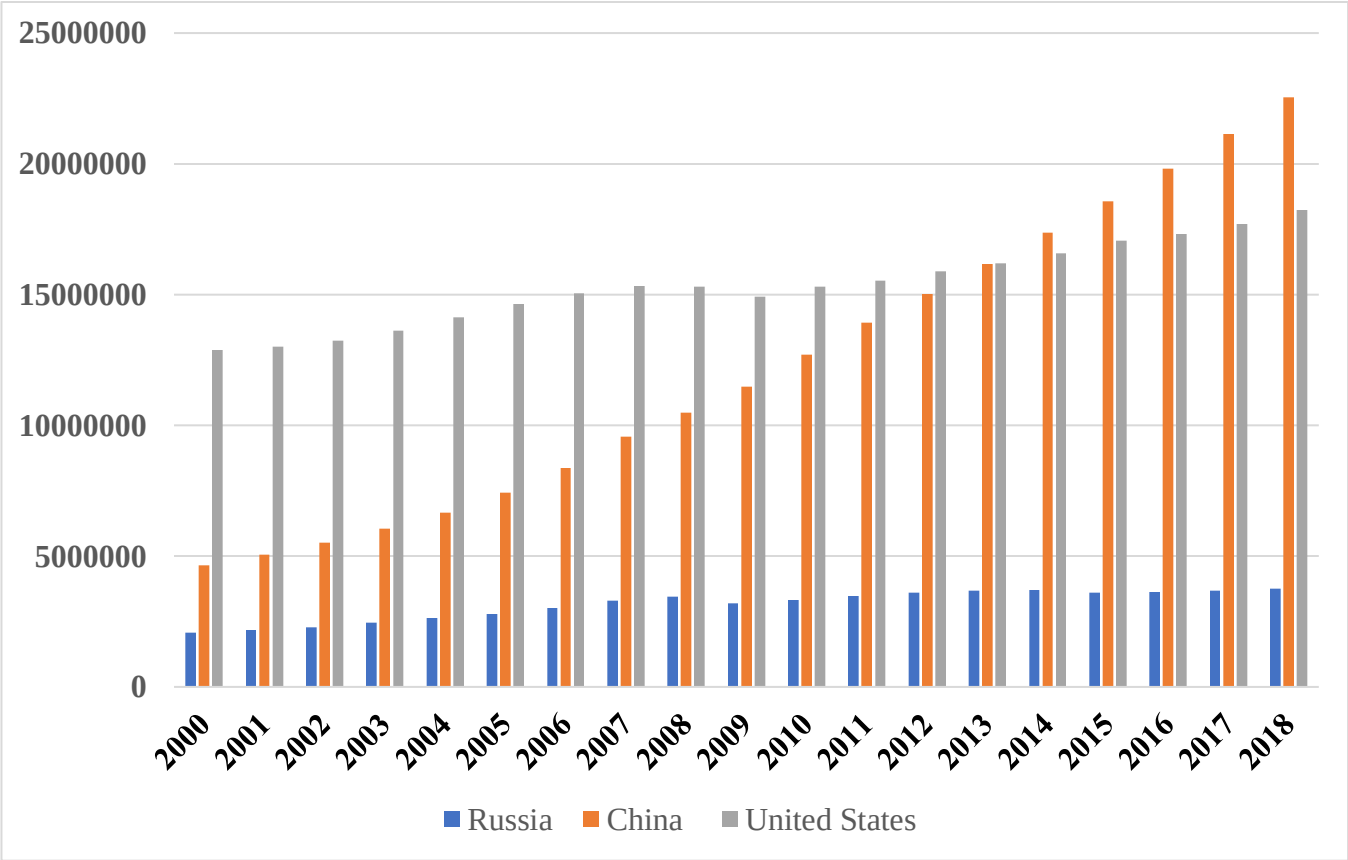


GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in constant 2010 U.S. dollars. Dollar figures for GDP are converted from domestic currencies using 2010 official exchange rates. For a few countries where the official exchange rate does not reflect the rate effectively applied to actual foreign exchange transactions, an alternative conversion factor is used.

Source: World Bank, "GDP (constant 2010 US$)" https://data.worldbank.org/indicator/NY.GDP.MKTP.KD

Chart Sixteen – Part Two: Comparing GDP, of Russia, China, and the United States in PPP from 2000-2018

(in Constant 2011 $ International Millions)

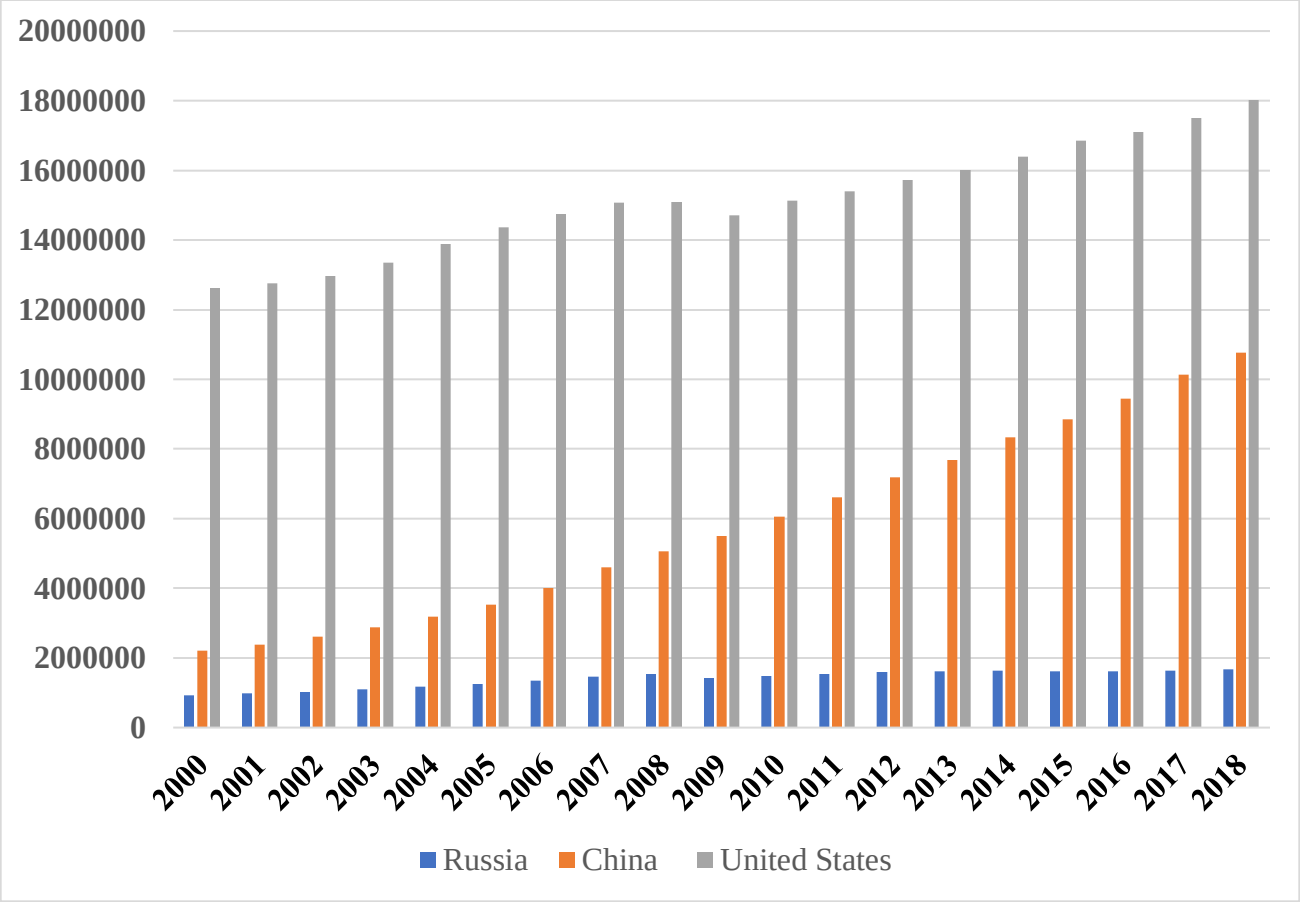


PPP GDP is gross domestic product converted to international dollars using purchasing power parity rates. An international dollar has the same purchasing power over GDP as the U.S. dollar has in the United States. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in current international dollars. For most economies PPP figures are extrapolated from the 2011 International Comparison Program (ICP) benchmark estimates or imputed using a statistical model based on the 2011 ICP. For 47 high- and upper middle-income economies conversion factors are provided by Eurostat and the Organization for Economic Co-operation and Development (OECD).

Source: World Bank, "GDP, PPP (constant 2011 international $)"
https://data.worldbank.org/indicator/NY.GDP.MKTP.PP.KD

Chart Sixteen – Part Three: Comparing GNI of Russia, China, and the United States by Official Exchange Rate from 2000-2018

(in Constant 2010 $US Millions)

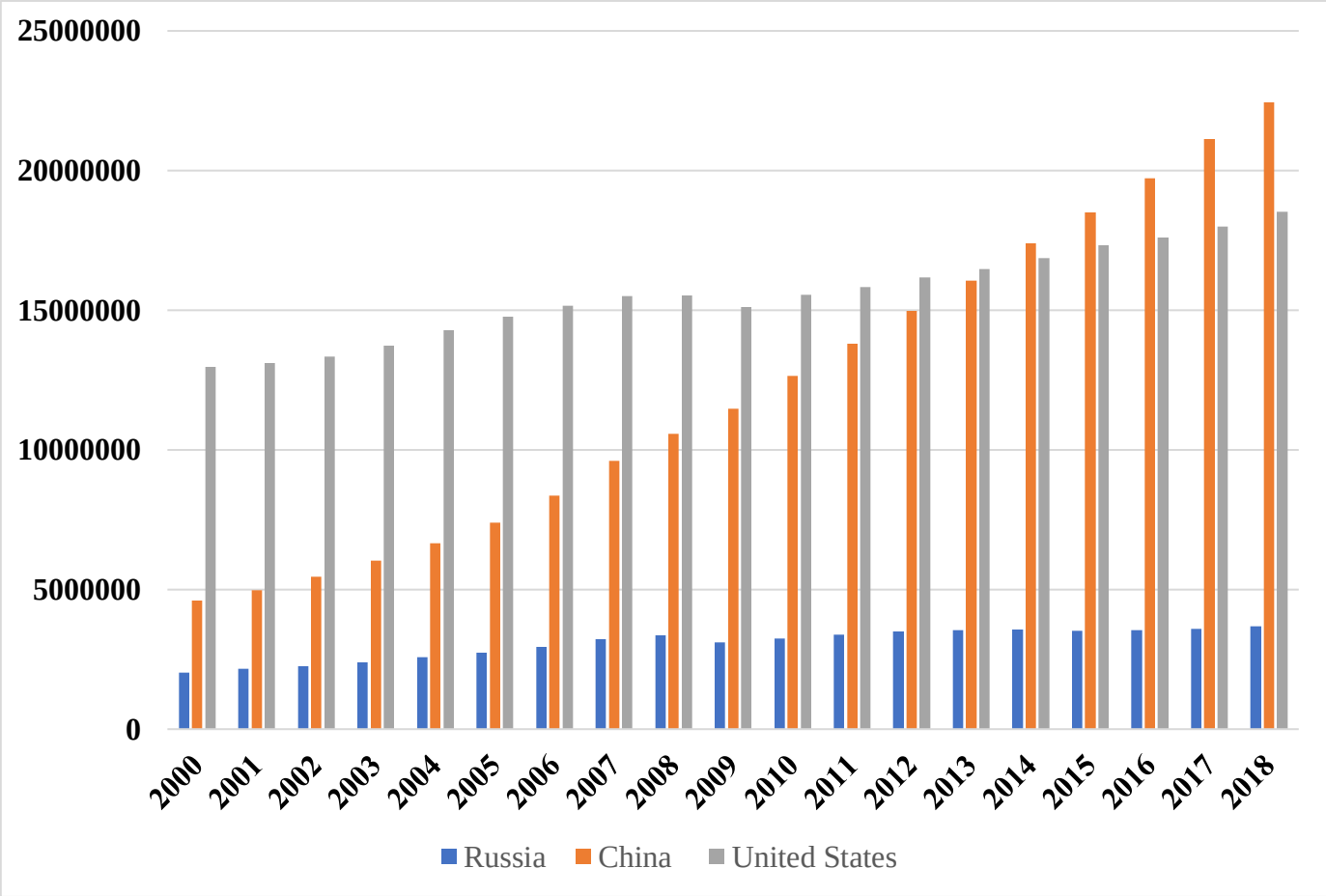


GNI (formerly GNP) is the sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output plus net receipts of primary income (compensation of employees and property income) from abroad. Data are in constant 2010 U.S. dollars.

Source: World Bank, "GNI (constant 2010 US$)" https://data.worldbank.org/indicator/NY.GNP.MKTP.KD

Chart Sixteen – Part Four: Comparing GNI of Russia, China, and the United States in PPP from 2000-2018

(in Constant 2011 $ International Millions)

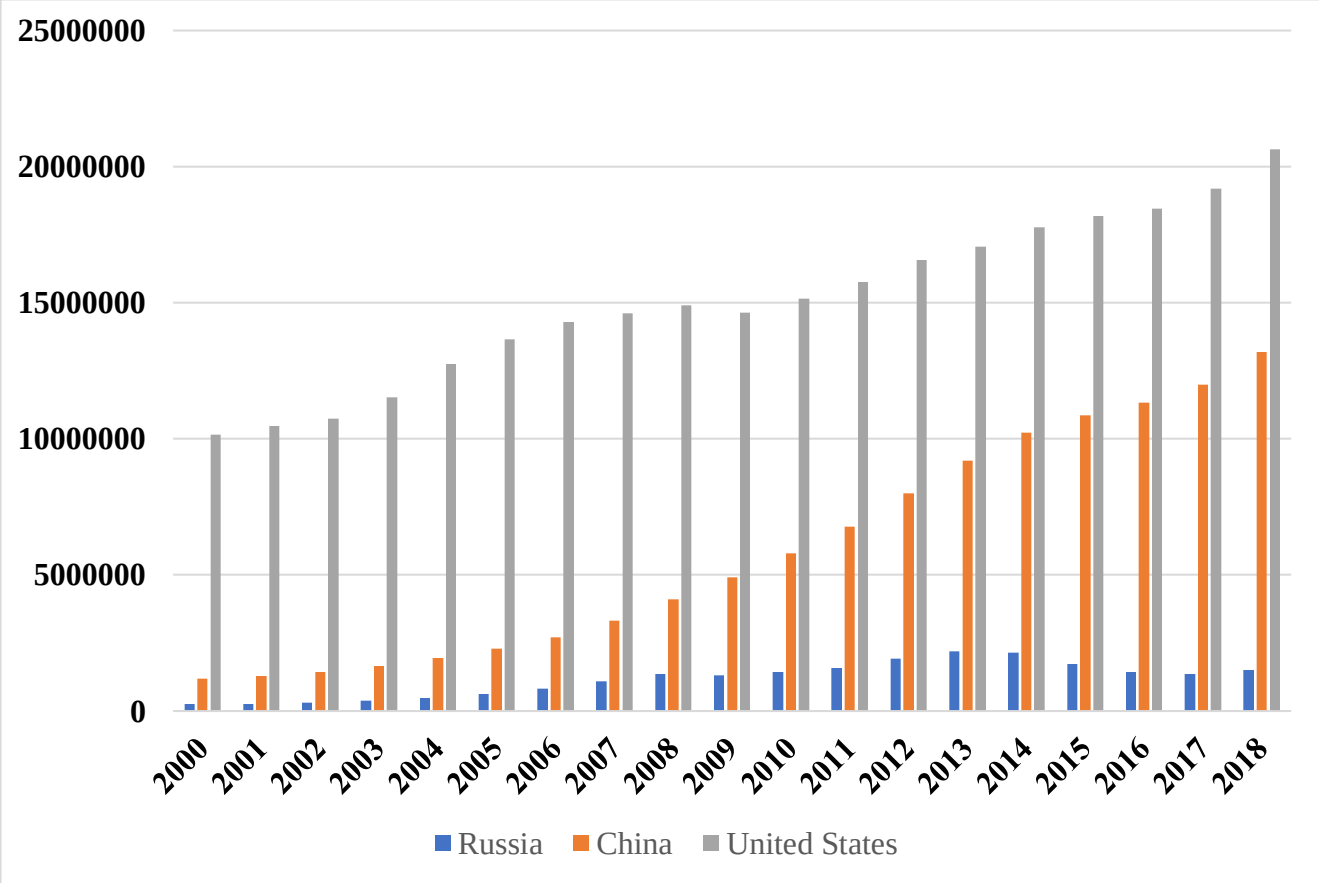


PPP GNI (formerly PPP GNP) is gross national income (GNI) converted to international dollars using purchasing power parity rates. An international dollar has the same purchasing power over GNI as a U.S. dollar has in the United States. Gross national income is the sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output plus net receipts of primary income (compensation of employees and property income) from abroad. Data are in current international dollars. For most economies PPP figures are extrapolated from the 2011 International Comparison Program (ICP) benchmark estimates or imputed using a statistical model based on the 2011 ICP. For 47 high- and upper middle-income economies conversion factors are provided by Eurostat and the Organization for Economic Co-operation and Development (OECD).

Source: World Bank, "GNI, PPP (constant 2011 international $)"
https://data.worldbank.org/indicator/NY.GNP.MKTP.PP.KD

Chart Sixteen – Part Five: Comparing GNI of Russia, China, and the United States with the Atlas Method from 2000-2018

(in Current $US Millions)



GNI (formerly GNP) is the sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output plus net receipts of primary income (compensation of employees and property income) from abroad. Data are in current U.S. dollars. GNI, calculated in national currency, is usually converted to U.S. dollars at official exchange rates for comparisons across economies, although an alternative rate is used when the official exchange rate is judged to diverge by an exceptionally large margin from the rate actually applied in international transactions. To smooth fluctuations in prices and exchange rates, a special Atlas method of conversion is used by the World Bank. This applies a conversion factor that averages the exchange rate for a given year and the two preceding years, adjusted for differences in rates of inflation between the country, and through 2000, the G-5 countries (France, Germany, Japan, the United Kingdom, and the United States). From 2001, these countries include the Euro area, Japan, the United Kingdom, and the United States.

Source: World Bank, "GNI, Atlas method (current US$)" https://data.worldbank.org/indicator/NY.GNP.ATLS.CD

Wide Differences by Source in Estimating Total Economic Power

These problems in comparing the pre-Coronavirus crisis trends are further complicated by the fact that there are so many conflicting sources of such estimates of the total Chinese, Russian, and U.S. economies. Key sources like the World Bank, IMF, UN, the CIA, and various NGOs and commercial research centers all tend to provide different numbers that produce somewhat different rankings and estimates of trends.

Chart Sixteen showed the major differences in the ability to economically compete that emerge when one changes the method of estimation, but all were all drawn from World Bank estimates. **Chart Seventeen** shows the variation of estimates on economic power when they come from different sources, and there are many other sources that would provide additional sets of differing data.

- The CIA's *World Factbook* estimates as of May 2020 reported that in 2017, China's Gross Domestic Product (GDP) was $25.36 trillion in purchasing power parity (PPP) terms and $12.01 trillion in official exchange rate terms. Russia had a GDP of $4.106 trillion dollars in PPP terms and $1.578 trillion in official exchange rate terms. Using these comparisons, China's GDP was 6.4 times greater than Russia in PPP terms but only 2.6 times greater than Russia at the official exchange rate.[46]
- The World Bank produced different figures. The World Bank's *estimate of GDP in PPP terms* in current dollars was $21.41 trillion for China, $4.192 for Russia, and $20.54 for the United States. These estimates gave the U.S. a GDP that was only 0.81 times that of China, but 5.1 times that of Russia.[47]
- The World Bank's *estimate of GDP in Current Monetary Value* in current dollars was $13.58 trillion for China, $1.67 trillion for Russia, and $20.58 for the United States. These estimates gave the U.S. a GDP that was only 0.96 times that of China but 12.3 times that of Russia.[48]

There is no consensus over which set of metrics provides the best picture of economic power. Some experts argue that PPP numbers compensate for differences in the levels of development and economic structure, while others argue that monetary comparisons focus more on the modern sectors that shape current forces and economic capacity. And still others argue that some other measures of economic capacity should be used.

What is clear is that Russia is the outlier in both sets of estimates. Russia no longer comes close to having the economic status it had as the former Soviet Union (FSU) and when it dominated Eastern Europe. It is steadily becoming an increasingly distant third. Russia is now only a superpower in nuclear terms and in the size of the military forces it can deploy against NATO in Europe. The key question in terms of strategic competition, however, is "*what metrics matter most?*" and the corresponding response must be "*the key metric is the extent to which Russia does or does not use its smaller economy more effectively than the United States*."

At the same time, it equally clear that it will be the future trends in the size of the U.S., Chinese, and Russian economies that will determine how their relative economic power will benefit each nation over time. It is also difficult to make any reliable estimates in the near term. Current estimates either date back to the time before the appearance of the Coronavirus or emphasize their own uncertainty. It is clear that the impacts of the Coronavirus will lead to major cuts in virtually

every area of economic activity for at least all of 2020, and they will certainly affect the trends in the United States, China, and Russia for three to eight years in the future. This may sharply affect the relative rates of U.S. and Chinese growth over time, although Russia is nearly certain to continue to lag badly behind.

The Impact of Future Economic Development and the Impact of the Coronavirus on National Security Spending

There is no way as of yet to assess how the current crisis over the Coronavirus will change the domestic economies of China, Russia, and the United States; the character of their interactions with other states; or the level of civil competition and military spending.

Early estimates by the World Bank and IMF predict a serious downturn in 2020, but they are so tentative for the lasting impact that at least the IMF has presented three different cases ranging from a significant recovery in 2021 to a prolonged crisis through 2020. Similarly, reporting of the comparative responses to the crisis to date have tended to show that the U.S. fell badly behind in dealing with this kind of contingency from 2008 on, while China consistently planned for such a contingency over time.[49]

The U.S., Chinese, and Russian systems are so different that there is no reason to assume that the Coronavirus will have the same impact on each power, and there is no clear way to estimate the differences. It should be noted, however, that so far China claims to have made earlier steps toward recovery. It also is the one power that did try to consistently implement a plan to deal effectively with a Coronavirus-like contingency before the virus appeared and reached pandemic proportions.[50]

What is likely is that the Coronavirus crisis will open up new opportunities and fault lines in a wide range of countries that China and Russia can exploit. They may not gain any benefits relative to the U.S. and many other economies, but their national political systems give them considerably greater flexibility in conducting spoiler operations and exploiting the weaknesses, divisions, and fault lines in other states.

Chart Seventeen: Illustrative Comparisons of the Differences by Source in Estimates of the Chinese, Russian, and U.S. Economies
(Comparative GDP in Current $U. S. Billions)

CIA	GDP in Purchasing Power Parity (PPP)		GDP in Official Exchange Rate	
	$US Trillions	% of U.S. Total	$US Trillions	% of U.S. Total
U.S.	**19.49**	**-**	**19.49**	**-**
China	**25.36**	**120%**	**12.01**	**62%.**
Russia	**4.106**	**21%**	**1.578**	**8%**

World Bank	GDP in Purchasing Power Parity (PPP)		GDP in Current US$ Monetary Value	
	$US Trillions	% of U.S. Total	$US Trillions	% of U.S. Total
U.S.	**20.54**	**-**	**20.58**	**-**
China	**21.41**	**104%**	**13.89**	**67%**
Russia	**4.192**	**16%**	**1.67**	**8%**

Source: World Factbook, "Country Comparison: GDP," *CIA*, https://www.cia.gov/library/publications/the-world-factbook/fields/208rank.html; "GDP, PPP (current international $)," *World Bank*, https://data.worldbank.org/indicator/NY.GDP.MKTP.PP.CD; "GDP (Current US$)," *World Bank*, *https://databank.worldbank.org/reports.aspx?source=2&series=NY.GDP.MKTP.CD&country*.

Major Differences in the Structure of Each Economy

These problems in making top-line comparisons of the total economic power of each country and their potential capability to compete are compounded by the fact that there are many major differences in the structure of their economies – differences which will almost certainly have at least as much impact as that from the total size of each economy. An overview of some of the major differences are shown in **Chart Eighteen**.

Chart Eighteen shows just how different the sizes of the agricultural, industrial, and service sectors are in each economy, drawing on the data from the CIA *World Factbook*. It should be stressed that such data are even more uncertain in accuracy, definition, and methodology than GDP data, and they are only roughly comparable by date.

At the same time, they are still comparable enough to show that the U.S. industrial sector is estimated to be a half the size of China's, but close to three times that of Russia. To be specific, 40.5% of China's GDP was in industry and manufacturing in 2017, and its industrial production was growing at an annual rate of 6.1%. Meanwhile, 32.4% of Russia's GDP was in industry and manufacturing in 2017, and its industrial production was dropping at an annual rate of 1.0%. Only 19.1% of the U.S. GDP was in industry and manufacturing in 2017, and industrial production was rising at an annual rate of 2.3%.

It is obvious that any strategy based on assessing the strategic impact of competition needs to address such differences, but there is no agreed methodology for doing so or for separately assessing their impact on military comparisons. The data on the trends in industry and manufacturing alone raise such issues. The U.S. may have been the "arsenal of democracy" under President Roosevelt, but China seems to be taking the role as the "arsenal of autocracy" under President Xi.

Chart Eighteen: United States, China, and Russia: Comparative Agricultural, Industrial, and Service Sectors

Total GDP and Labor Force	**U.S.**	**China**	**Russia**
GDP (PPP) in $US Trillions (2017)	**19.49**	**23.21**	**4.02**
Labor Force in Millions (2009-2016)	**160.0**	**806.7**	**76.5**

Share of GDP (PPP) and Total Economy

	Agriculture			**Industry**			**Service**		
	U.S.	**China**	**Russia**	**U.S.**	**China**	**Russia**	**U.S.**	**China**	**Russia**
$ US Trillions	**0.18**	**1.83**	**0.19**	**3.72**	**9.40**	**1.30**	**15.59**	**11.97**	**2.50**
% of GDP	**0.9**	**7.9**	**4.7**	**19.1**	**40.5**	**32.4**	**80.0**	**51.6**	**62.3**

Share of Labor Force

	Agriculture			**Industry**			**Service**		
	U.S.	**China**	**Russia**	**U.S.**	**China**	**Russia**	**U.S.**	**China**	**Russia**
Millions	**1.12**	**223.54**	**7.19**	**32.48**	**232.34**	**21.11**	**59.68**	**350.91**	**48.19**
% of Total	**0.7**	**27.7**	**9.4**	**20.3**	**28.8**	**27.6**	**37.34**	**3.5**	**63**

Note: Rough comparisons since data are not all from the same year. Figures are rounded to nearest decimal point.
Source: Country Sections of CIA *World Factbook*, https://www.cia.gov/library/publications/the-world-factbook/.

Looking at Other Key Economic Factors Shaping Global Competition: Trade

Comparisons of total economic power also do not consider many other key factors that affect the ability to compete internationally in the civil and military domain. Key examples of such measures are volumes of trade, manufacturing power, foreign investment, key international projects, and key international infrastructure developments – many of which have potential military as well as civil value.

Nevertheless, many of the trend lines do again show far more rapid growth for China than for the United States, and very slow growth for Russia. Many are difficult to directly compare for all three countries, although **Chart Nineteen** provides some striking examples of key areas of China's growth in trade – and trade is only one sector of such growth.

Analyzing some "snapshots" of civil economic activity demonstrates the high potential impact on strategic competition. The CIA *World Factbook* reported in April 2020 that,[51]

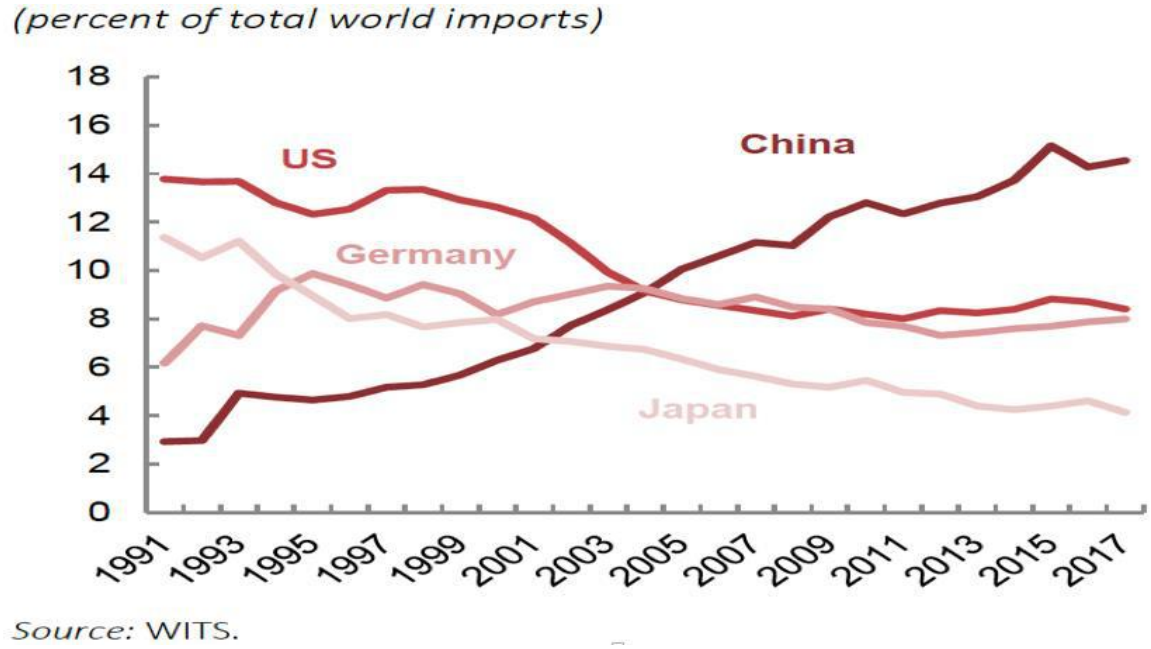
- Chinese exports grew from $1.99 trillion in 2016 to $2.49 trillion in 2018. Russian exports were heavily driven by changes in petroleum prices and grew from $282 billion in 2017 to $353 billion in 2018. U.S. exports grew from $1.46 trillion in 2017 to $1.55 trillion in 2018.
- Total Chinese worldwide imports grew from $1.501 trillion in 2016 to $2.14 trillion in 2018. Russian total imports grew from $192 billion in 2016 to $238 million in 2018. U.S. total imports dropped from $2.36 trillion in 2016 to $2.21 trillion in 2018.
- China's installed electric generating capability was 1.653 billion KW in 2016. Russia's installed electric generating capability was 1,031 billion KW in 2016. U.S. installed electric generating capability was 1.087 billion KW in 2016.
- Chinese crude oil imports were 6.71 million barrels a day in 2015. Russian crude oil imports were 76 thousand barrels a day in 2015. U.S. net crude oil imports were 6.81 million barrels a day in 2015 (put turned to a net surplus of exports by 2020).
- China had 6,817 registered commercial aircraft in 2017, and 510 paved runways. Russia had 661 registered commercial aircraft in 2017, and 594 paved runways. The US had 661 registered commercial aircraft in 2017, and 5,054 paved runways.
- China had 5,594 merchant marine ships: bulk carrier 1,231, container ship 262, general cargo 846, oil tanker 777, other 2,478 (2019). Russia had 2,739 merchant marine ships: bulk carrier 16, container ship 13, general cargo 899, oil tanker 404, other 1,407 (2019) The U.S. had 3,673 merchant marine ships: bulk carrier 5, container ship 60, general cargo 104, oil tanker 68, other 3,436 (2019).
- China had 192 million fixed telephone lines, 1,649 million cellular phone lines, and 731 million Internet users. China had 192 million fixed telephone lines, 1,649 million cellular phone lines, and 731 million Internet users. Russia had 30.1 million fixed telephone lines, 229 million cellular phone lines, and 731 million Internet users. China had 192 million fixed telephone lines, 1,649 million cellular phone lines, and 109 million Internet users. The U.S. had 110 million fixed telephone lines, 422 million cellular phone lines, and 247 million Internet users.

At the same time, work by the World Trade Organization provides a different set of estimates which show that the EU and the United States still led in total trade in 2016, if services are considered as well as goods. The structure of the global goods trade is also affected by the fact that the U.S. is not a net energy importer while China is a massive one, and also by the fact that electrical/electronic goods, machinery, and vehicles are now a far greater part of the world trade than basic imports like iron, steel, organic chemicals, other metals, and raw materials.[52]

Chart Twenty illustrates this need to examine trade competition by category as well as by volume, based on the World Trade Center's *World Trade Statistical Review* for 2020. It covers trends through 2019, which was the last pre-Coronavirus year. It shows that the U.S. is still the world's largest trader if services are included as well as goods, but that China leads in goods. Russia is an outlier in both cases and is only a major trading state because of its hydrocarbon exports. These comparisons only illustrate the need to find better ways to assess the strategic implications of trade competition. They do not provide more than the crudest basis to actually make such assessments.

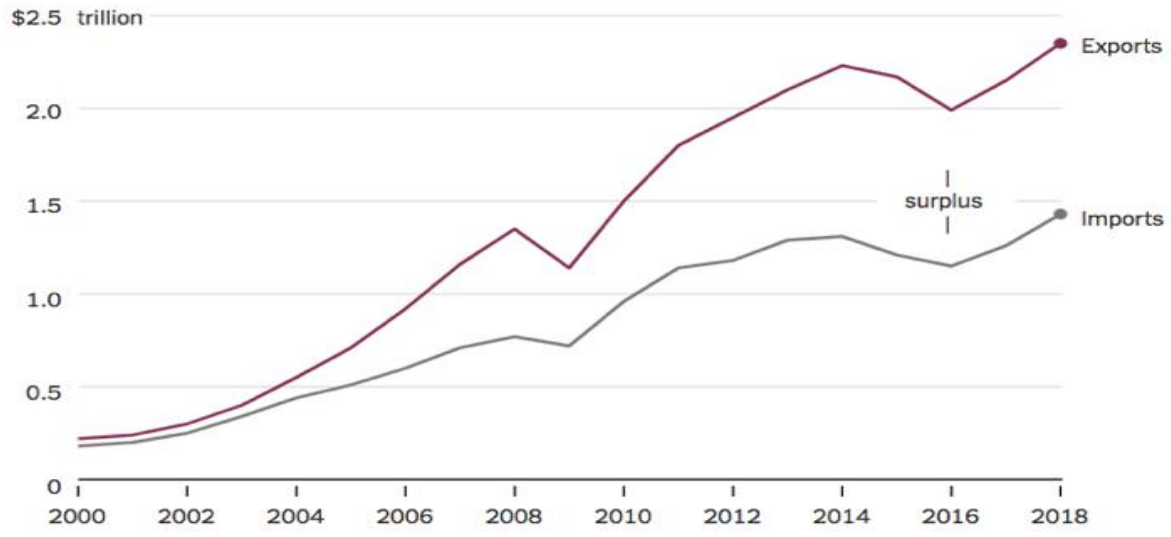
Chart Nineteen – Part One: Examples of China's Rising Competitiveness in Trade

Share of Global Trade in Goods by Country: 1991-2017 (Percent of World Imports)



Source: World Bank, *China Economic Update*, May 2019, p. 15, http://pubdocs.worldbank.org/en/392571559199605819/CEU-May-2019-EN.pdf

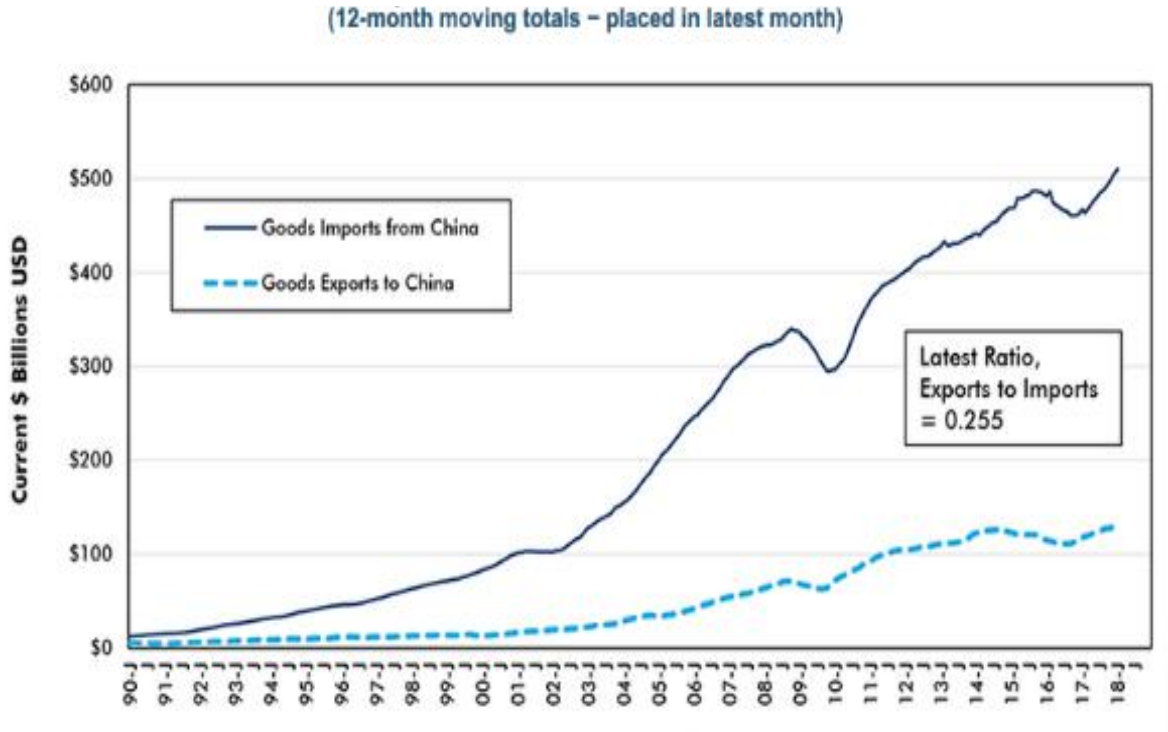
Chinese Surplus in Manufactured Goods Trade: 1991-2017 ($US Trillions)



Source: By Keith Bradsher, "China Needs New Places to Sell Its Mountain of Stuff," *New York Times*, July 26, 2019, https://www.nytimes.com/2019/07/26/business/china-trade-war-us-rcep.html.

Chart Nineteen – Part Two: Examples of China's Rising Competitiveness in Trade

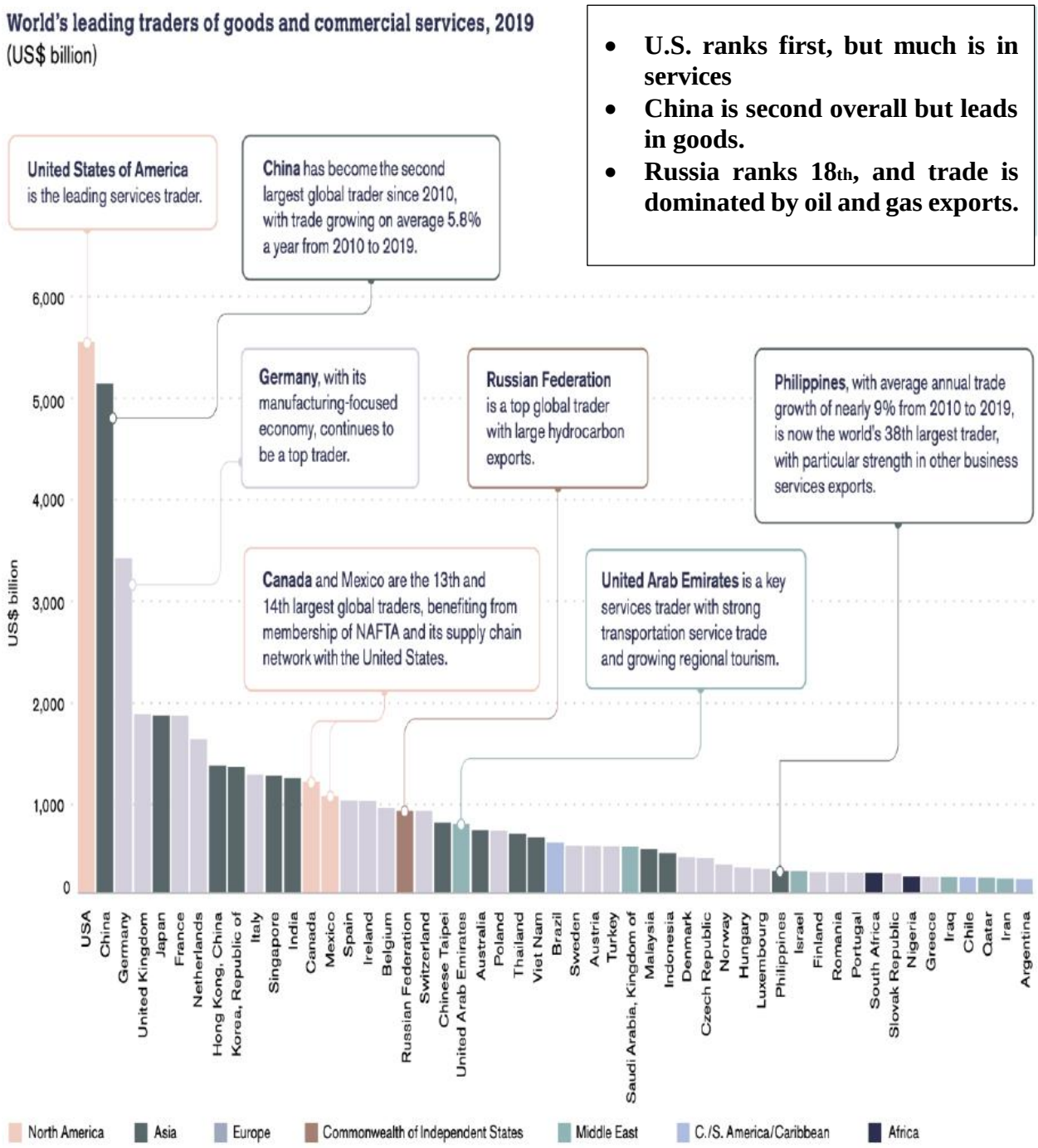
U.S. Merchandise Trade with China 1990-2019: Pre-"Trade Wars" and Coronavirus Crisis



Source: Alan Garrick: "The Reality of U.S. Foreign Trade – In 6 Graphs, Construct Connect,"
https://www.constructconnect.com/blog/economy/reality-u-s-foreign-trade-6-graphs

Chart Twenty – Part One: WTO Estimate of Comparative Global Trade Volumes

- **U.S. ranks first, but much is in services**
- **China is second overall but leads in goods.**
- **Russia ranks 18th, and trade is dominated by oil and gas exports.**



Source: WTO-UNCTAD in cooperation with ITC and UNSD.

Chart Twenty – Part Two: WTO Estimate of Comparative Global Trade Volumes

Leading exporters and importers in world merchandise trade, 2019
(Billion dollars and percentage)

Rank	Exporters	Value	Share	Annual percentage change	Rank	Importers	Value	Share	Annual percentage change
1	China	2499	13.2	0	1	United States of America	2568	13.4	-2
2	United States of America	1646	8.7	-1	2	China	2077	10.8	-3
3	Germany	1489	7.9	-5	3	Germany	1234	6.4	-4
4	Netherlands	709	3.8	-2	4	Japan	721	3.7	-4
5	Japan	706	3.7	-4	5	United Kingdom	692	3.6	3
6	France	570	3.0	-2	6	France	651	3.4	-3
7	Korea, Republic of	542	2.9	-10	7	Netherlands	636	3.3	-1
8	Hong Kong, China	535	2.8	-6	8	Hong Kong, China	578	3.0	-8
	Domestic exports	15	0.1	18		Retained imports (1)	138	0.7	-10
	Re-exports	517	2.7	-7					
9	Italy	533	2.8	-3	9	Korea, Republic of	503	2.6	-6
10	United Kingdom	469	2.5	-4	10	India	484	2.5	-6
11	Mexico	461	2.4	2	11	Italy	474	2.5	-6
12	Canada	447	2.4	-1	12	Mexico	467	2.4	-2
13	Belgium	445	2.4	-5	13	Canada	464	2.4	-1
14	Russian Federation	419	2.2	-5	14	Belgium	426	2.2	-6
15	Singapore	391	2.1	-5	15	Spain	372	1.9	-5
	Domestic exports	184	1.0	-12					
	Re-exports	206	1.1	1					
16	Spain	334	1.8	-4	16	Singapore	359	1.9	-3
						Retained imports (1)	153	0.8	-9
17	Chinese Taipei	331	1.8	-2	17	Chinese Taipei	287	1.5	0
18	India	324	1.7	0	18	Switzerland	277	1.4	-1
19	Switzerland	314	1.7	1	19	Poland	262	1.4	-3
20	United Arab Emirates (1)	280	1.5	-12	20	United Arab Emirates (1)	262	1.4	0
21	Australia	272	1.4	6	21	Russian Federation (2)	254	1.3	2

Leading exporters and importers in world trade in commercial services (excluding intra-EU trade), 2019
(Billion dollars and percentage)

Rank	Exporters	Value	Share	Annual percentage change	Rank	Importers	Value	Share	Annual percentage change
1	Extra-EU exports	1123	22.4	1	1	Extra-EU imports	1010	21.4	8
2	United States of America	853	17.0	2	2	United States of America	564	11.9	5
3	United Kingdom	412	8.2	2	3	China	497	10.5	-5
4	China	282	5.6	4	4	United Kingdom	279	5.9	8
5	India	214	4.3	5	5	Japan	202	4.3	1
6	Singapore	205	4.1	1	6	Singapore	199	4.2	-1
7	Japan	201	4.0	6	7	India	178	3.8	2
8	Switzerland	120	2.4	-4	8	Korea, Republic of	125	2.6	-2
9	Korea, Republic of	101	2.0	4	9	Canada	114	2.4	0
10	Hong Kong, China	101	2.0	-10	10	Switzerland	104	2.2	-2
11	Canada	99	2.0	1	11	Russian Federation	97	2.1	5
12	Thailand	82	1.6	6	12	Hong Kong, China	79	1.7	-3
13	United Arab Emirates	72	1.4	2	13	United Arab Emirates	73	1.5	2
14	Australia	69	1.4	1	14	Australia	70	1.5	-2
15	Turkey	64	1.3	10	15	Brazil	67	1.4	-3
16	Russian Federation	62	1.2	-3	16	Thailand	58	1.2	7
17	Israel	55	1.1	11	17	Chinese Taipei	56	1.2	0
18	Chinese Taipei	51	1.0	3	18	Norway	53	1.1	1
19	Norway	45	0.9	2	19	Saudi Arabia, Kingdom of	52	1.1	-6
20	Macao, China	43	0.9	-1	20	Malaysia	43	0.9	-2

Source: World Trade Organization, *World Trade Statistical Review*, 2020, p. 15, 82, 85, https://www.wto.org/english/res_e/statis_e/wts2020_e/wts2020_e.pdf.

The Civil-Military Industrial Base

Two other aspects of competition also have a key impact, and they again highlight China's growth. These are the shape and trends in each country's industrial base, as well as the shape and trends in its technology base – which is discussed later in this analysis. Chart Eighteen has already highlighted the importance of the relative size of each nation's industrial sector – although the difference between the industrial sector and key high technology elements that are now included in the service sector is becoming steadily less clear.

The broad trends in the industrial base are easier to quantify and show striking changes. The U.S. entered World War II with a major lead in industrial capacity that made it the "arsenal of democracy," which it retained well into the 1980s. However, China has since equaled and overtaken the United States.

Once again, sources differ sharply and use different sources and definitions. However, a study conducted by the *Brookings Institution* in 2018 is almost certainly correct in showing that China had taken the lead over the United States by 2015.[53] This growth is shown in **Chart Twenty-One**, and it should be noted that it shows that while China has overtaken the United States, it has fallen far short of the overall output of countries that rely on democracy and capitalism.

For example, a later study by the World Economic Forum, issued on February 25, 2020, reported on the 10 leading countries in manufacturing output and estimated that China provided 28.4% of the world's output in 2018, and the U.S. provided 16.6%. Mexico was the tenth at 1.5%, and Russia did not even make the top ten.[54] When it came to the value added to the GDP by manufacturing output, *Statista* ranked China first at $43,995 billion; the U.S. second at $2,321 billion; and Russia thirteenth at only $217 billion.[55]

The quality and nature of industrial production is at least as important as the total volume output, but far harder to quantify. This again highlights the need for new approaches to analyzing such aspects of competition – issues explored again in dealing with the need to compare in the trends in each country's technology base.

Looking Beyond Macroeconomics

There is a clear need to look well beyond such macroeconomic data in examining the present and probable future ability to compete in strategic terms in order to make such comparisons by specific countries or regions in ways that highlight the key strategic issues involved. This analysis must sometimes extend to given levels of technology, major areas of industrial capacity, and specific areas of investment activity. These examples also illustrate the urgency of using such analysis to fully understand the impact of the Coronavirus crisis once those impacts become clearer.

Better data, modeling, and analyses are needed to determine how to fully analyze both civil and military competition, but there is one central fact regarding these issues that must be kept in careful perspective: *The comparisons shown in this analysis that use a wide range of other measures of economic power demonstrate that competition with China is becoming the key focus in terms of relative power, not Russia – and that the Coronavirus is unlikely to change this situation.*

China is still far poorer than the United States in terms of per capita wealth and average living conditions, but it increasingly competes directly with the U.S. in virtually every measure of economic and manufacturing power. "*Who's on first?*" is becoming largely irrelevant as both powers have become steadily more comparable in terms of overall development. China has already

shown that it can compete directly with the U.S. in some key measures of both civil and military power.

Chart Twenty-One – Part One: Brookings Analysis of Global Rank in Manufacturing Output and Value of Manufacturing Output

Shifts in Global Ranking: 1970-2015

Year	U.S.	Russia	Japan	Germany	China	U.K.	France	Italy	Canada	Spain
1970	1	2	3	4	5	6	7	8	9	10
1980	1	2	3	4	5	8	6	7	11	10
1990	1	7	2	3	8	6	5	6	11	10
2000	1	16	2	3	4	5	7	7	9	11
2005	1	14	2	4	3	7	6	5	10	9
2006	1	14	2	4	3	7	6	5	10	9
2007	1	12	3	4	2	8	6	5	13	10
2008	1	9	3	4	2	7	6	5	14	11
2009	1	17	3	4	2	10	6	5	14	11
2010	2	11	3	4	1	10	8	6	14	12
2011	2	11	3	4	1	10	9	6	14	15
2012	2	10	3	4	1	11	8	7	14	15
2013	2	9	3	4	1	11	8	6	14	15
2014	2	11	3	4	1	9	8	7	14	15
2015	2	15	3	4	1	8	9	7	13	14

Source: http://www.madeherenow.com/news/post/2017/01/27/britain-moves-up-the-world-manufacturing-league-table

Source: Adapted from Darrel M. West and Christian Lansang, "Global manufacturing scorecard: How the US compares to 18 other nations," *Brookings*, July 10, 2018, https://www.brookings.edu/research/global-manufacturing-scorecard-how-the-us-compares-to-18-other-nations/.

Chart Twenty-One – Part Two: Brookings Analysis of Global Rank in Manufacturing Output and Value of Manufacturing Output

Leading countries in manufacturing output, 2015

Country	Manufacturing Output (USD in billions)	Percent of National Output	Percent of Global Manufacturing
China	$2,010	27%	20%
United States	1,867	12	18
Japan	1,063	19	10
Germany	700	23	7
South Korea	372	29	4
India	298	16	3
France	274	11	3
Italy	264	16	3
United Kingdom	244	10	2
Taiwan	185	31	2
Mexico	175	19	2
Spain	153	14	2
Canada	148	11	1
Brazil	146	11	1
Russian Federation	139	11	1
Turkey	125	18	1
Indonesia	115	22	1
Poland	100	20	1
Switzerland	93	18	1
Netherlands	88	12	1

Source: United Nations Conference on Trade and Development, 2015

Source: Adapted from Darrel M. West and Christian Lansang, "Global manufacturing scorecard: How the US compares to 18 other nations," *Brookings*, July 10, 2018, https://www.brookings.edu/research/global-manufacturing-scorecard-how-the-us-compares-to-18-other-nations/.

Comparing the Limits Imposed by the Need to Support a Given Population

At the same time, relative population and domestic demand are still key factors – as is the need to make progress in education, governance, and civil society. States must deal with the needs of their peoples, and this is particularly true in the near-term because of the Coronavirus crisis. China's power to compete is limited by its need to support a far larger population than that of the United States or Russia. The CIA estimates that China's population in 2020 was 1,394 million; Russia's was 141.7 million; and the U.S. population was 332.6 million – slightly less than a quarter of China but 2.3 times that of Russia.

At the same time, states differ in development and in the ability of their governments to choose between improving living standards or investing in military and civil competition. **Chart Twenty-Two** shows the World Bank estimates of the pre-crisis trends in income per capita based on the same multiple methods of estimation as Chart Sixteen.

These comparisons provide a broad measure of economic power that go beyond the Gross National Product (GDP) and Gross National Income (GNI). GDP is the total market value of all finished goods and services produced within a country in a set time period. GNI is the total income received by the country from its residents and businesses regardless of whether they are located in the country or abroad.

It is clear from these charts that state-driven systems like China and Russia have an advantage in strategic competition because they do not have to provide competitive levels of per capita income and wealth:

- **Part One** of Chart Twenty-Two compares the gross domestic product (GDP) per capita of the United States, Russia, and China in constant 2010 $US from 2000-2018. When using the market exchange rate, the U.S. ranked first for the country with the highest national output when divided by the country's midyear population. Russia ranked second because although it had a lower comparative GDP to China, its population size is significantly smaller than China's, and therefore its GDP does not have to be distributed among as many people.
- **Part Two** of Chart Twenty-Two compares the GDP per capita using the purchasing power parity (PPP) exchange rate in constant 2011 $ international from 2000-2018. Although China's GDP in PPP terms ranked first in Chart Sixteen, its population count is so significant, that once again it is surpassed by both the United States and Russia.
- **Part Three** of Twenty-Two compares the gross national income (GNI) per capita of the United States, Russia and China in constant 2010 $US from 2000-2018. When using the market exchange rate, the United States ranks first, followed by Russia, and then China.
- **Part Four** of Twenty-Two compares the GNI per capita using the PPP exchange rate in constant 2011 $ international from 2000-2018. Despite China's low labor costs and wages, its population count is still so significant that Part Four follows a similar trend to Part Two of Chart Twenty-Two where the U.S. ranks first, followed by Russia, and then China.

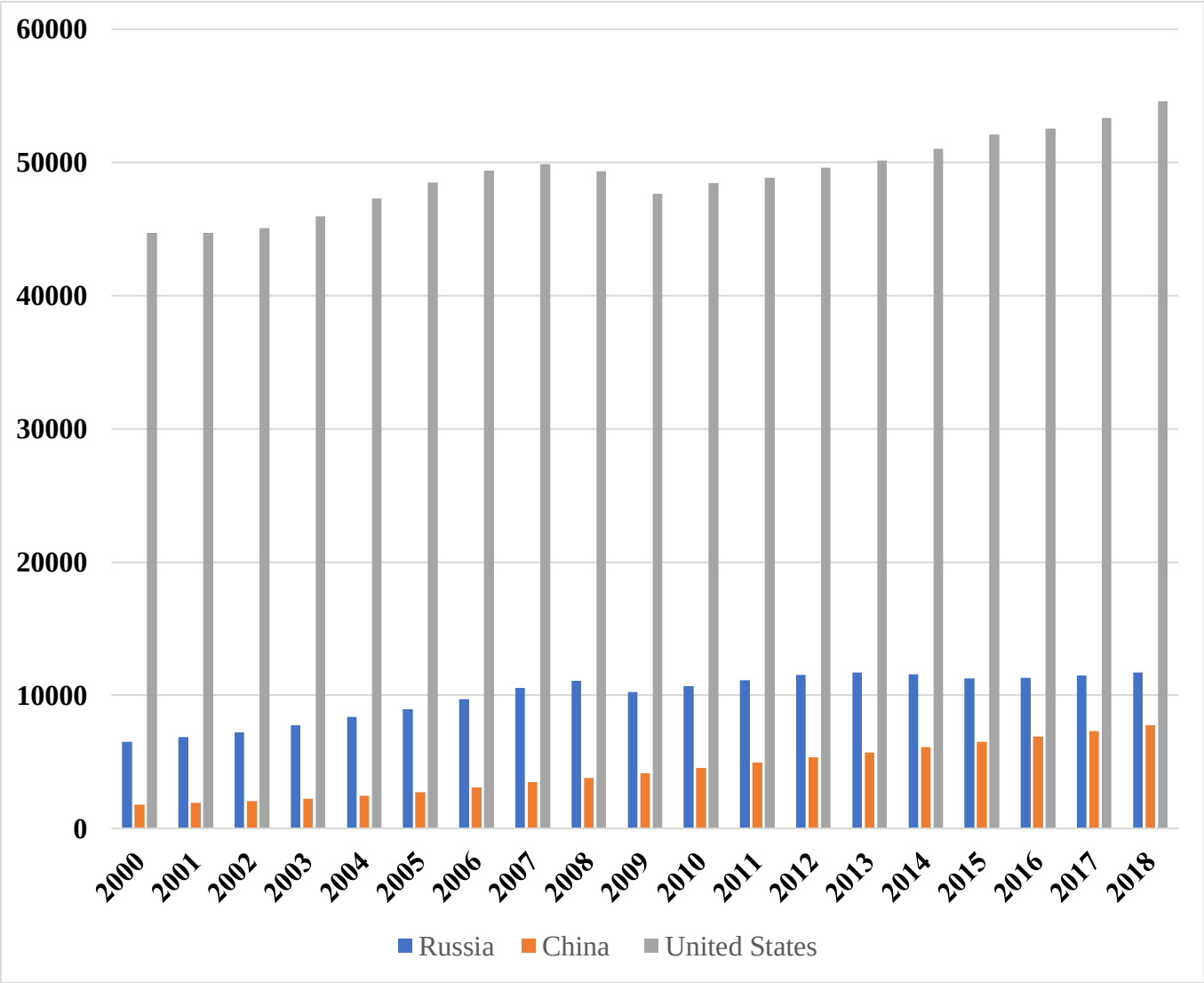
- **Part Five** of Chart Twenty-Two compares the GNI per capita of the United States, Russia, and China using the World Bank's Atlas Method in current $US from 2000-2018. Although the rankings are the same as the previous parts of Chart Twenty-Two, two trends become noticeable when applying the Atlas Method. First, Russia's economy spiked in 2013, which may be explained by the rising oil and gas export revenues it experienced that year. The second trend is that the economies of Russia and China are very comparable and almost equal to each other by 2018, which can serve as evidence that the size of Russia's economy is so small that China's economy is still larger despite the significant population discrepancy between Russia and China.

Even a short glance at the data in these charts will show how different these estimates and trends are, particularly for China and Russia. The PPP data almost certainly exaggerate Chinese and Russian per capita income relative to the United States, while the GNI data underestimate it. Such data also do not reflect what given per capita incomes can actually buy, the comparative living standards in each country, or any aspect of the equity in income distribution.

Even so, such figures make it clear that the United States, China, and Russia all have different major inequalities and problems in income distribution that limit what they can spend on civil-military competition. It is also apparent that their leaders have very different abilities to allocate resources away from popular needs and demands, but no leadership can go beyond some limits in favoring competition over their citizens' needs. Unfortunately, there is no meaningful comparative analysis of what these limits are.

Chart Twenty-Two – Part One: Comparing GDP Per Capita of Russia, China, and the United States by Official Exchange Rate from 2000-2018

(in Constant 2010 $US)

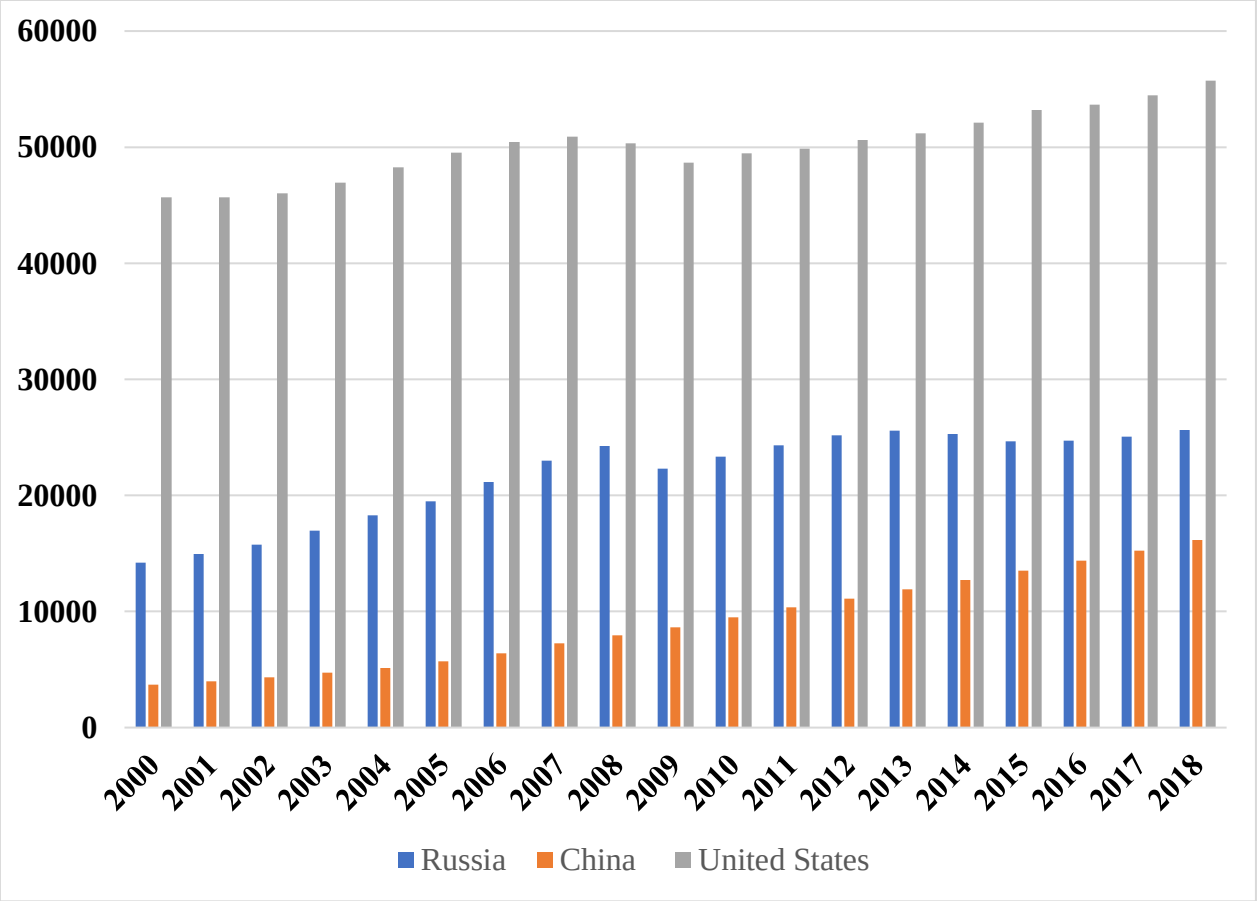


GDP per capita is gross domestic product divided by midyear population. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in constant 2010 U.S. dollars.

Source: World Bank "GDP per capita (constant 2010 US$)"
https://data.worldbank.org/indicator/NY.GDP.PCAP.KD

Chart Twenty-Two – Part Two: Comparing GDP per capita of Russia, China, and the United States in PPP from 2000-2018

(in Constant 2011 $ International)

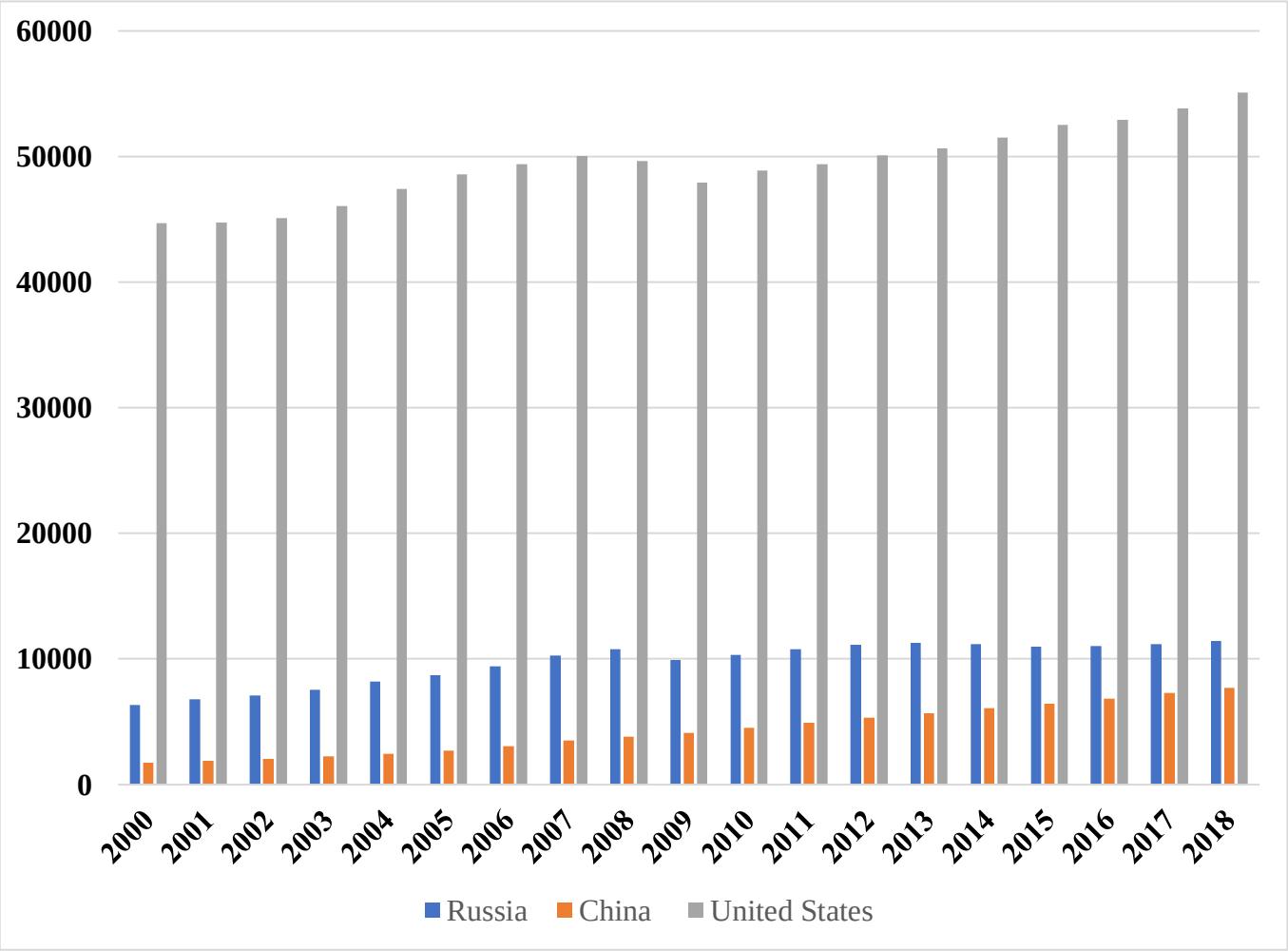


GDP per capita based on purchasing power parity (PPP). PPP GDP is gross domestic product converted to international dollars using purchasing power parity rates. An international dollar has the same purchasing power over GDP as the U.S. dollar has in the United States. GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in constant 2011 international dollars.

Source: World Bank, "GDP per capita, PPP (constant 2011 international $)"
https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.KD

Chart Twenty-Two – Part Three: Comparing GNI Per Capita of Russia, China, and the United States by Official Exchange Rate from 2000-2018

(in Constant 2010 $US)

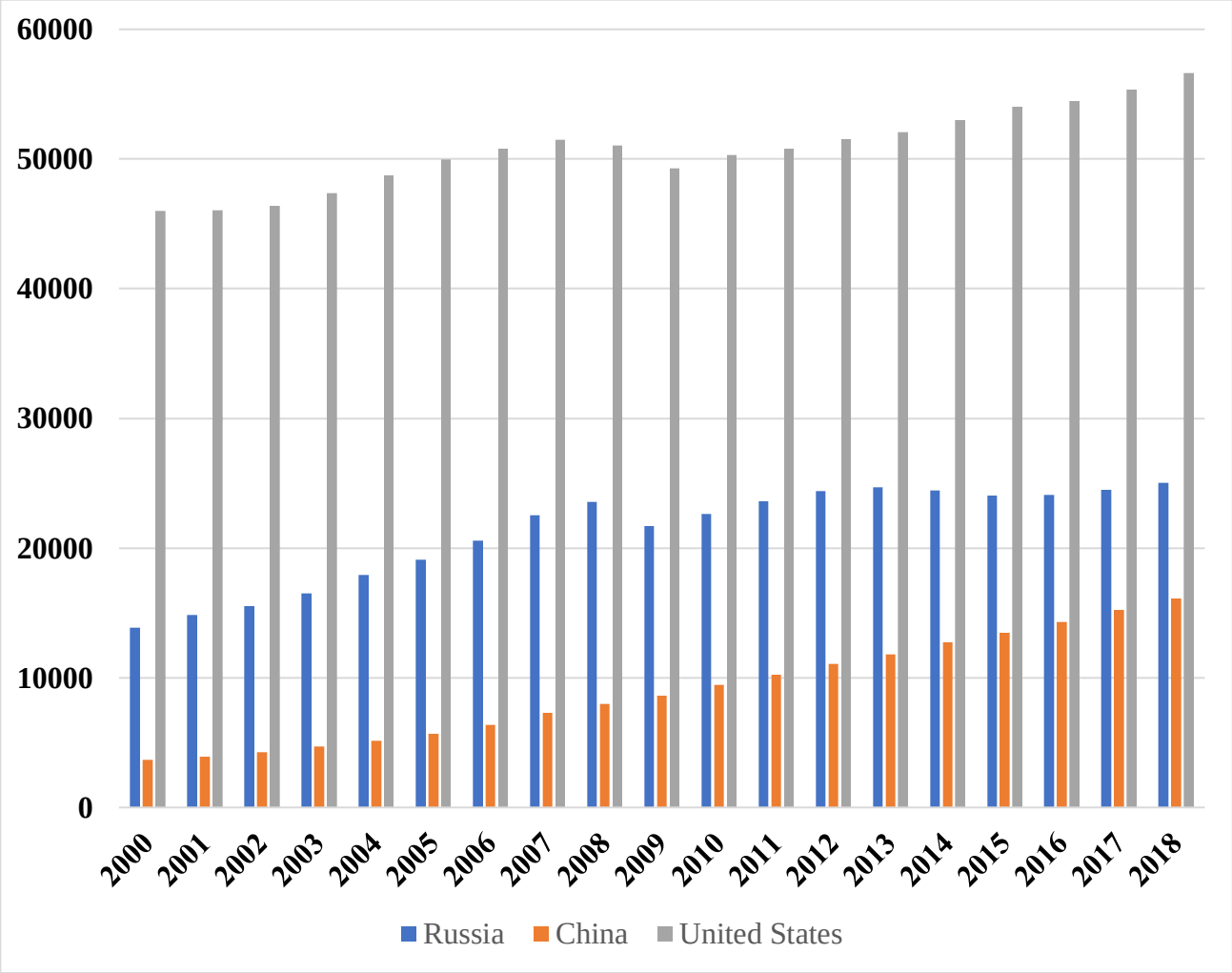


GNI per capita is gross national income divided by midyear population. GNI (formerly GNP) is the sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output plus net receipts of primary income (compensation of employees and property income) from abroad. Data are in constant 2010 U.S. dollars.

Source: World Bank, "GNI per capita (constant 2010 US$)"
https://data.worldbank.org/indicator/NY.GNP.PCAP.KD

Chart Twenty-Two – Part Four: Comparing GNI Per Capita of Russia, China, and the United States in PPP from 2000-2018

(in Constant 2011 $ International)

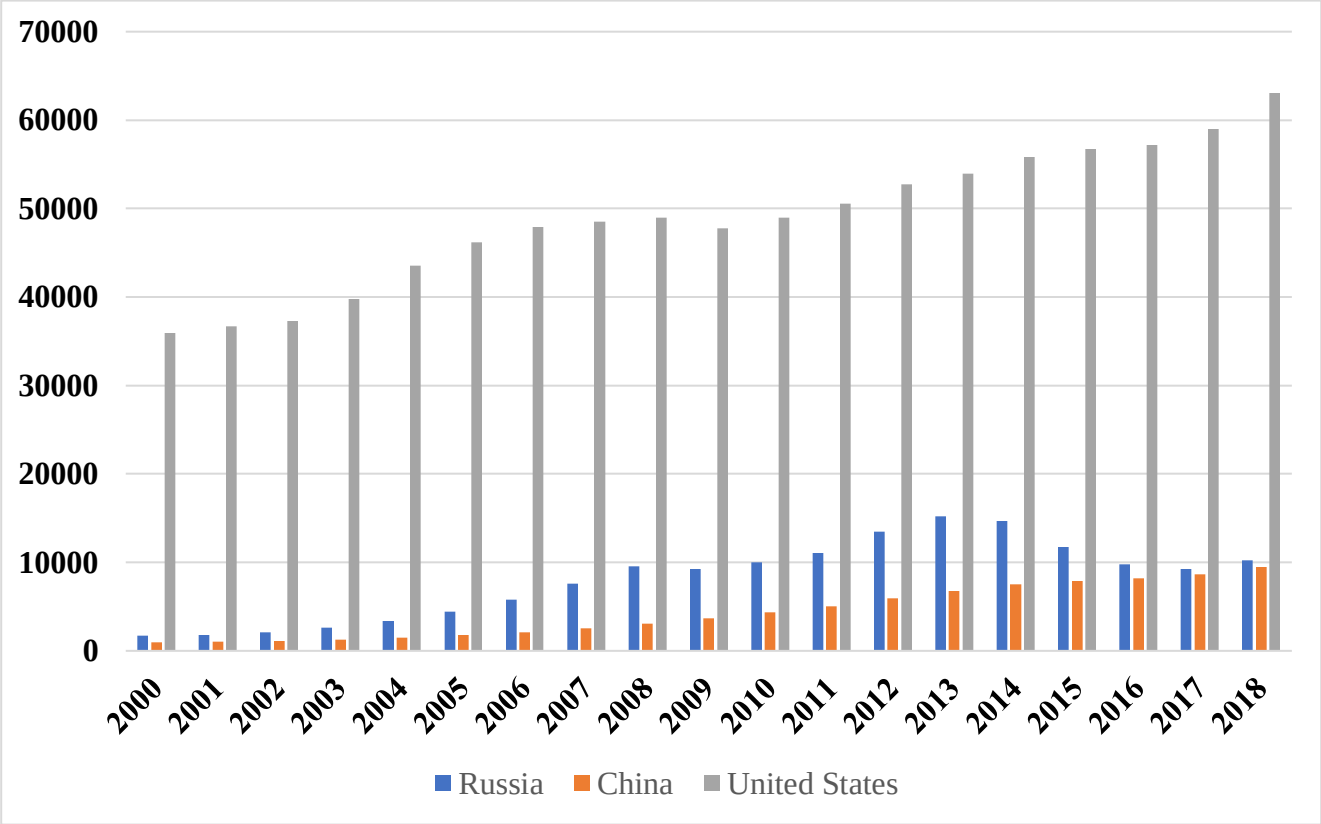


GNI per capita based on purchasing power parity (PPP). PPP GNI is gross national income (GNI) converted to international dollars using purchasing power parity rates. An international dollar has the same purchasing power over GNI as a U.S. dollar has in the United States. GNI is the sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output plus net receipts of primary income (compensation of employees and property income) from abroad. Data are in constant 2011 international dollars.

Source: World Bank, "GNI per capita, PPP (constant 2011 International $)"
https://data.worldbank.org/indicator/NY.GNP.PCAP.PP.KD

Chart Twenty-Two – Part Five: Comparing GNI Per Capita of Russia, China, and the United States with the Atlas Method from 2000-2018

(in Current $US)



GNI per capita (formerly GNP per capita) is the gross national income, converted to U.S. dollars using the World Bank Atlas method, divided by the midyear population. GNI is the sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output plus net receipts of primary income (compensation of employees and property income) from abroad. GNI, calculated in national currency, is usually converted to U.S. dollars at official exchange rates for comparisons across economies, although an alternative rate is used when the official exchange rate is judged to diverge by an exceptionally large margin from the rate actually applied in international transactions. To smooth fluctuations in prices and exchange rates, a special Atlas method of conversion is used by the World Bank. This applies a conversion factor that averages the exchange rate for a given year and the two preceding years, adjusted for differences in rates of inflation between the country, and through 2000, the G-5 countries (France, Germany, Japan, the United Kingdom, and the United States). From 2001, these countries include the Euro area, Japan, the United Kingdom, and the United States.

Source: World Bank, "GNI per capita, Atlas method (current US$)"
https://data.worldbank.org/indicator/NY.GNP.PCAP.CD

The Human Impact of Economic Competition

While it does not affect economic competition in narrow strategic terms, it is also important to point out that there are many other ways to estimate how well a given regime is serving its people – and the role of the Coronavirus crisis will be an important consideration.

For example, **Chart Twenty-Three** shows that the United Nations provides a very different method of scoring the overall progress in Chinese, Russian, and U.S. human development – and it also makes different estimates of per capita income. As for the Coronavirus, its impact has already become so severe that they may force the United States, China, and Russia – as well as other states throughout the world – to alter or reduce the economic resources they devote to funding and competing in the military and national security dimensions.

Chart Twenty-Four expands upon a model developed by Howard J. Shatz that summarizes both key economic and civil parameters. The United States may be more vulnerable in these areas because its democratic system will make the U.S. more vulnerable to popular demands and pressure, but it is unrealistic to assume that the leaders of China and Russia will not consider the welfare of their peoples, the need for popular support, and political stability. All three major powers do have to compete both domestically and internationally over how well they serve their people. The question is how much they differ in such sensitivities and the importance of the resulting popular reactions.

Chart Twenty-Three: UN Human Development Rankings of the United States, China, and Russia in 2019

Category	U.S.	China	Russia
Overall Country Ranking	**15**	**85**	**49**
Human Development Index, (HDI) (Value)	**0.920**	**0.750**	**0.824**
Life Expectancy in Years	**78.9**	**76.7**	**72.4**
Expected Years of Schooling	**16.3**	**13.9**	**15.5**
Mean Years of Schooling	**13.4**	**7.9**	**12.0**
Gross National Income (GNI) Per Capita (PPP-US$)	**56,140**	**16,127**	**25,036**

Source: *UN Human development Rankings, 2019*, United Nations, http://hdr.undp.org/en/content/2019-human-development-index-ranking.

Chart Twenty-Four: Domestic Economic Indicators for the U.S., Chinese, Russian, and Other Leading Economies

Category and Country	1990	2000	2010	2019
Gross domestic product (Current $B)				
United States	5,963	10,252	14,992	21,428
China	361	1,211	6,087	14,343
Russia	517	260	1,525	1,670
European Union	6,600	7,258	14,540	15,593
Japan	3,133	4,888	5,700	5,082
Share of World GDP (%)				
United States	26	31	23	15.11
China	2	4	9	19.24
Russia				3.07
European Union	34	27	26	16.05
Japan	14	15	9	4.05
Per capita GDP ($PPP)				
United States	36,813	45,661	49,479	65,280
China	1,522	3,690	9,498	16,784
Russia	8,027	6,825	20,490	29,181
European Union	24,868	30,299	34,135	46,467
Japan	30,582	33,872	35,750	43,235
Unemployment rate (%)				
United States	6.8	4.0	9.6	3.68
China	2.4	3.3	4.5	3.62
Russia		10.58	7.4	4.59
European Union	8.6	9.3	9.5	6.20
Japan	2.1	4.7	5.1	2.29
Youth unemployment rate (%)				
United States	13.3	9.2	18.3	3.7
China	4.4	6.9	9.8	10.3
Russia		20.7	17.1	16.1
European Union	18.4	19.9	22.1	15.1
Japan	4.5	9.1	9.5	3.7

SOURCE: Adapted from work by Howard J. Katz using the World Bank and World Development Indicators (WDI and Statista.com)

NOTES: Gross domestic product is in billions of nominal dollars and is the WDI variable. Share of world GDP is in percentage terms and is nominal GDP for the geographic entity relative to world GDP using the GDP variable. Per capita GDP is in terms of purchasing-power parity in constant 2011 international dollars and is WDI variable. Unemployment rate listed as 1990 is actually for 1991 and is WDI variable. The youth unemployment rate listed as 1990 is actually for 1991 and is WDI variable. Youth unemployment is measured for people ages 15 to 24. Both unemployment rates are modeled ILO (International Labour Organization) estimates.

Defining What Economic Competition Really Matters

All of these comparisons and trends communicate two things. One is the rapid rate of growth in China's global position and the limited size of Russia's current economy. The second is the lack of a clear model on how to analyze what aspects of economic development and size really matter in terms of strategic competition between the United States, China, and Russia. This is partly a data problem, but it is far more a problem in terms of what data really matter and what levels and kinds of growth actually pose serious strategic challenges.

It is pointless, for example, to compare the total GDP or GNI of the U.S. and China without taking account of the fact that China's present population is over four times that of the United States. The decline in the U.S. share of global manufacturing and world trade may matter, but it is also true that such a decline is inevitable in a world where more nations are achieving advantageous development. Competition in technology is scarcely a problem if it improves the living standards of all the nations that use it, but very different if it affects the military balance and global stability.

It is equally dangerous to judge national economic systems in purely ideological terms. The U.S. and its allies may prefer truly democratic and open societies, but this does not mean that more state-driven systems do not also provide benefits for their peoples as well. Accordingly, a U.S. strategy that focuses on competing with China and Russia must set out clear criteria for the type competition and must be able to justify those parameters.

This is illustrated all too clearly in the following chapter, which shows the problems in tying legitimate complaints about China's economic and civil behavior to dubious ideological positions that identify them as Marxist-Leninist, or in ignoring the fact that Chinese nationalism and authoritarianism is at least partly the result from China's emergence from a period of turmoil, war, and economic imperialism that lasted from the beginning of the Opium Wars in the 1830s until the U.S. opened up to China in 1972. The U.S. does face real economic and civil threats from China and Russia, but it needs to focus on the areas where these threat are real, find effective responses, and deal with the fact it is going to have to share the world with other political systems indefinitely into the future.

Preparing for Long-Term Economic Competition

This analysis also makes it clear that the U.S. needs far better tools to assess the positive and negative aspects of economic competition; that such analysis needs to be objective rather than ideological; and that simply demanding new terms of trade, trying to preserve fading aspect of U.S industry and manufacturing capability, and setting other narrow and parochial U.S. policy goals are not the types of approach the U.S should take.

The need to find better ways to analyze the nature of Chinese and Russian economic competition – and possible ways react to it – is at least as serious as the need to reform the military side of U.S. strategic planning. The U.S. not only needs to develop far better ways to analyze its own current and long-term competitiveness with China and to ensure a continued lead over Russia, but it needs to find the best possible ways to work with other states – especially its strategic partners – to ensure their economic development and support.

The U.S. also needs to rethink its approach to industrial policy, technological development, and the role of government in encouraging overseas investment and trade. So far, the U.S. has relied largely on market forces – a reliance that has worked well in normal economic competition with

its major trading partners, but may not be suitable in competing with state-driven systems like China and Russia. The U.S. needs to at least examine current trend and options for more direct U.S. government incentives and intervention and to look beyond sanctions, tariffs, and trade barriers. In a world where economies become the equivalent of weapons, the U.S. may have to respond in kind.

At the same time, it is equally important to find areas where finding productive ways to cooperate with China and Russia – rather than simply engaging in competition or trying to contain their economic growth – may accomplish a great deal to make such competition productive for all the states involved and could ease military competition and tensions as well. The fact that the world's three major military powers have very different state and economic systems has certainly not precluded China's economic growth to date or inhibited the United States from obtaining both major benefits and challenges from that growth as well.

The U.S. needs a far better understanding of the comparative trends in the U.S., Chinese, and Russian economies – and of the resulting policy options that are available. As is discussed in the following chapters, this not only requires a new approach to assessing the economics of military competition, but it requires a much better understanding of Chinese and Russia motives and the changes taking place in other areas of civil competition.

VI. Civil Competition: Competing in Other Areas that Do Not Involve the Use of Military Force

> "Whoever is first in the field and awaits the coming of the enemy, will be fresh for the fight; whoever is second in the field and has to hasten to battle will arrive exhausted." ― Sun Tzu, The Art of War

Russia and China can be counted on to compete in the civil sector just as much as they compete at the military and economic level. They have both already shown that they do not separate civil and military efforts, and that they use civil competition to achieve strategic objectives without any ties to the use of their military forces in order to exert influence and enhance military strategic competition.

This civil competition already comes in many forms. Although espionage and election meddling are both subversive and unlawful tactics the Russia and China deploy when competing in the civil arena, they also have a wide arsenal of ways to compete at civil levels – many that are hard to characterize and detect. These include measures, such as the Russian support of separatist movements in Eastern Europe or the Chinese governance projects that are part of its Belt and Road Initiative in Africa. They also include information warfare and disinformation campaigns, political warfare and propaganda activities, industrial espionage and theft of research and technology, using investments and major projects to gain strategic leverage in other countries, and the development of ports and critical infrastructure facilities.

China and Russia can also use civil programs to enhance their military development, expand the range of their gray zone activities, and use their military forces in ways that do not commit them to combat, while also using investment and economic development activities to achieve strategic objectives that provide direct military benefits. Both the authoritarian character of their regimes and the ability of their governments to manipulate a large part of their industrial and commercial base give them an advantage in exploiting the civil side of a "whole of government" approach to global competition.

Competition in Civil Multi-Domain, IS&R, Cyber, Information Warfare and Political Warfare

There is no clear way to separate civil economic competition from political competition in several other key areas of U.S., Chinese, and Russian operations. Here again, however, China and Russia have been highly proactive, while the U.S. has made relatively limited gains. Once again state-driven efforts allow them to closely link their civil efforts to their broader strategic goals, while the U.S. relies far more on private sector efforts:[56]

- *Focus on critical lead technology research, development, technology, and evaluation (RDT&E) and deployment*: China in particular has shown that targeting investments in key areas of technology can offer major advantages like 5G, artificial intelligence, population monitoring, and many other areas that enhance state control of the civil population which can be potentially useful in new areas like "smart city" warfare.
- *Multi-Domain Competition in civil technology and deployed programs* affects area of space like Global Positioning Satellites (GPS), communications, commercial imaging, data transmission, boosters, and many areas of antisatellite operations.

- *Political warfare and propaganda* affect civil media, use of the internet, deception operations in civil communications, limits on U.S. media and news collection, commercial transactions, and financing.
- *Financial operations* can range widely from fraud and low-level cybercrime, major attacks on banking and stock market operations, broad economic sanctions and barriers, trade restrictions, and global bank and financial operations.
- *Information "warfare"* can be covert or overt, political and/or economic, or accurate and/or based on disinformation. It can vary from targeted attacks to support of individuals with broad operations affecting nations and key economic and political systems – including national elections.
- *Infrastructure operations and vulnerability:* A wide range of critical infrastructure can be attacked or affected by economic competition or attacks through means like civil warfare. Peacetime analysis of critical operations and targeting can also have a major impact on capabilities for gray area operations.
- *Internet operations* can occur at every level from the use of social networking to censorship and monitoring of the Internet, including attacks on the ability of the Internet to operate.
- *Cyber competition* can be used at virtually every level from tolerating and encouraging private hacking to state efforts that affect critical cyber operations at the civil level whose potential impact cannot be distinguished from military attacks on cyber systems and the economy.
- *Investment, foreign aid and loans, and major foreign business operations*: A wide range of investments, foreign aid and loans, and major business operations can be tailored to serve the objective set for international competition.
- *Sanctions, trade barriers, domestic investment and foreign investment controls, immigration and migration control*: Manipulation, limits, and incentives can be applied to a wide range of civil activities, including trade barriers; singling out given nationals, ethnic groups, or sectarian groups; and favoring given foreign elites and power brokers.

As the *Chinese and Russian chronologies* that support this analysis show, these are all areas where the effective difference between competition and warfare can be pushed to the point where it only can be distinguished by the use of weapons in physical violence. These also are areas that are far harder to deter, and where the U.S. has often been slow to detect such operations to try to counter them effectively.

In general, the U.S. has limited such efforts in competing with China and Russia to the use of trade barriers and sanctions designed largely to achieve narrow economic objectives. China and Russia have operated on a much broader level. The U.S. also has tended to highly compartmentalize the analysis of such Chinese and Russia operations, rather than assess them on a grand strategic level. The Coronavirus crisis again will make changes to U.S. planning and behavior more urgent.

Competition in Technology

Technology is clearly a key area in civil competition where there is no clear dividing line between civil and military competition – given the fact that virtually every advancement in one area leads to advances in the other. The U.S. still retains a lead in many areas of civil and military technology,

but Russia can draw on one of the most advanced technological bases in the world, and China is catching up in terms of its overall R&D efforts. There are no metrics that provide a clear basis for measuring relative progress in military technology and the military industrial base. However, the different civil estimates in **Chart Twenty-Five**, **Chart Twenty-Six**, **Chart Twenty-Seven**, and **Chart Twenty-Eight** all help illustrate China's progress – and highlight the areas where the U.S. must pay close attention to Russian behavior – as well as that of rogue states.

While these data have the same level of uncertainties and differences that have existed in the previous comparisons, it is clear that Russia has been forced to limit key areas of spending to the point where some of its current military and civil efforts are now a legacy of its past achievements.[57] China, however, has made an immense investment in its civil and military technology on a national level over the last few decades, and China's leader – Xi Jinping – set four key goals at a National Science and Technology Conference in May 2016:[58]

- 2020: Advance domestic competence for global innovation competition.
- 2025: Reduce reliance on foreign technology.
- 2030: Make milestone contributions to the global scientific community.
- 2050: Lead and dominate in the science and technology powerbase.

As **Chart Twenty-Five** to **Chart Twenty-Seven** show, these efforts are making China the lead competitor with the United States, although Russia has a long history of innovation and technological progress to draw upon. Many studies indicate China also seems to be catching up in civil and military technology – partly through espionage and also through its manufacturing capability. Given current trends, the differences in other estimates will largely have vanished at some point no later than 2030-2045. The impact of the Coronavirus may change this progress – both preliminary World Bank and IMF estimates now indicate that it will only alter such trends by several years.[59]

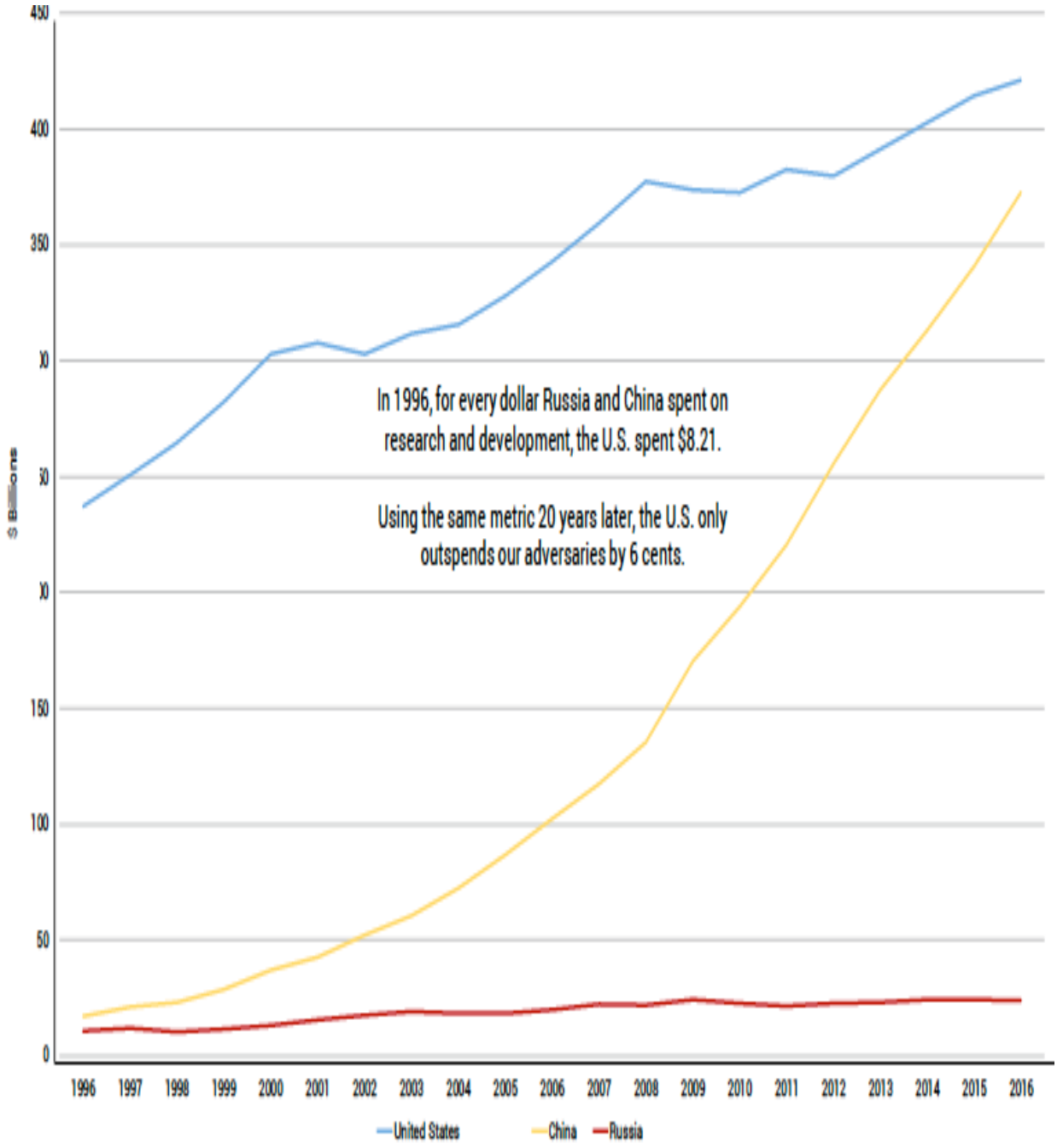
This is a critical area for U.S. planning and analysis, and one where the net assessment of comparative trends in developing new technologies is critical in understanding the longer-term impacts of competition, and it emphasizes the need for U.S. government efforts to go beyond the efforts of the private sector, the academic, and the corporate research and development programs. It is equally critical to assess progress in reaching the capability to apply technology on a commercial or industrial scale and to actually deploy new technologies both in competing on a commercial and military level. The technology base is only as real as the industrial base that can actual produce and deploy it.

The U.S. learned during World War I, World War II, and the Cold War that it cannot rely on commercial and academic efforts alone to develop and produce competitive levels of military technology. The growth of global high technology firms, networks like the Internet, developments in space, and – more recently – progress in vaccines are all current examples of the growing number of areas where federal support may be needed to compete with nations like China in commercial technology as well.

Moreover, the ability to look as far into the future will be equally critical, and the U.S. may well need the civil equivalent of the Defense Advanced Research Projects Agency (DARPA) – as well as to expand DARPA's role in creating net assessment of the overall trends in military technology. This may challenge the total reliance on private enterprise, but once again, ideology is no substitute for reality.

Chart Twenty-Five: Comparison of U.S., Chinese, and Russian Spending on Research and Development: 1996-2016

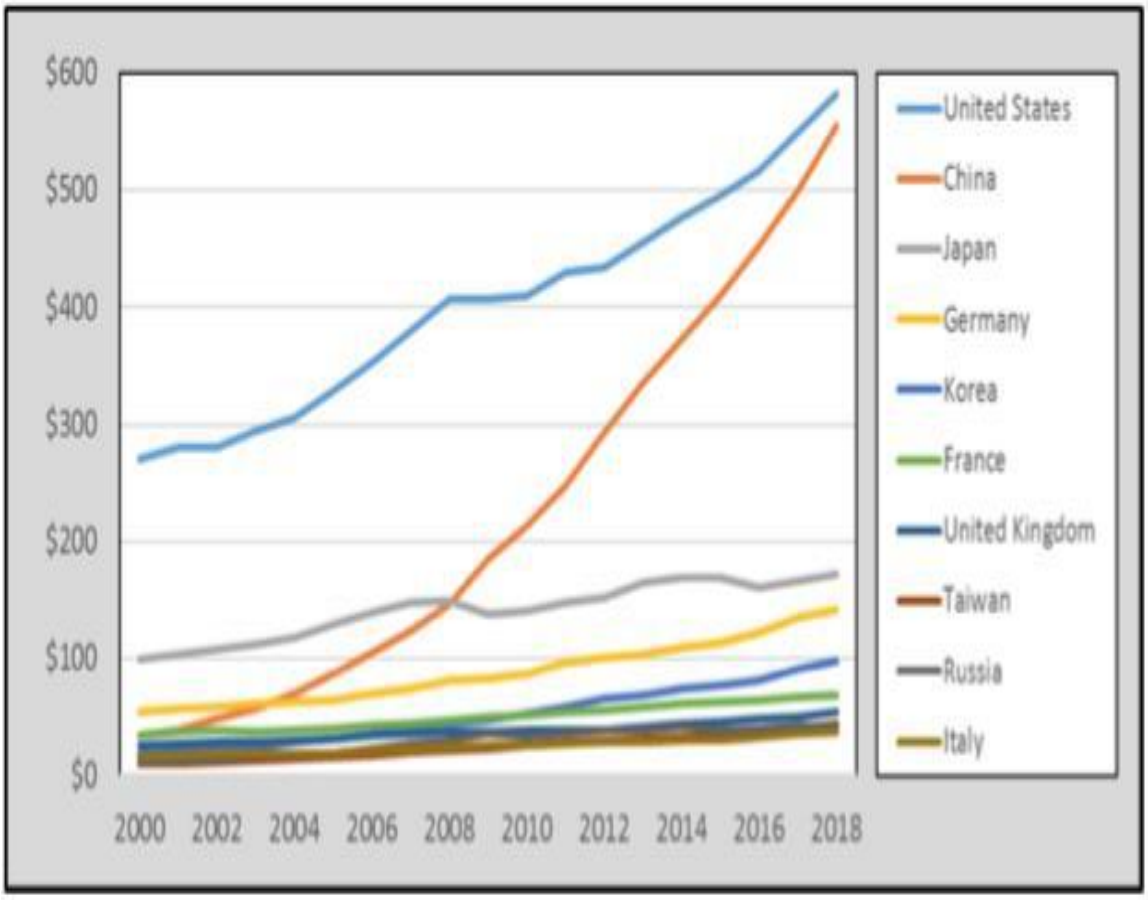
Annual Expenditure on Research and Development (Adjusted for Purchasing Power Parity)


450
400
350
300
250
200
150
100
50
0
$ Billions
In 1996, for every dollar Russia and China spent on research and development, the U.S. spent $8.21.
Using the same metric 20 years later, the U.S. only outspends our adversaries by 6 cents.
1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016
United States
China
Russia

Source: United Nations Educational, "Scientific and Cultural Organization R&D Database"; IISS Military Balance; and World Bank (For gross domestic product, See Providing for the Common Defense, p. 29, 2018).

Chart Twenty-Six: R&D Expenditures of Russia, China, and the United States from 2000-2018

(In $US Current PPP Billions)

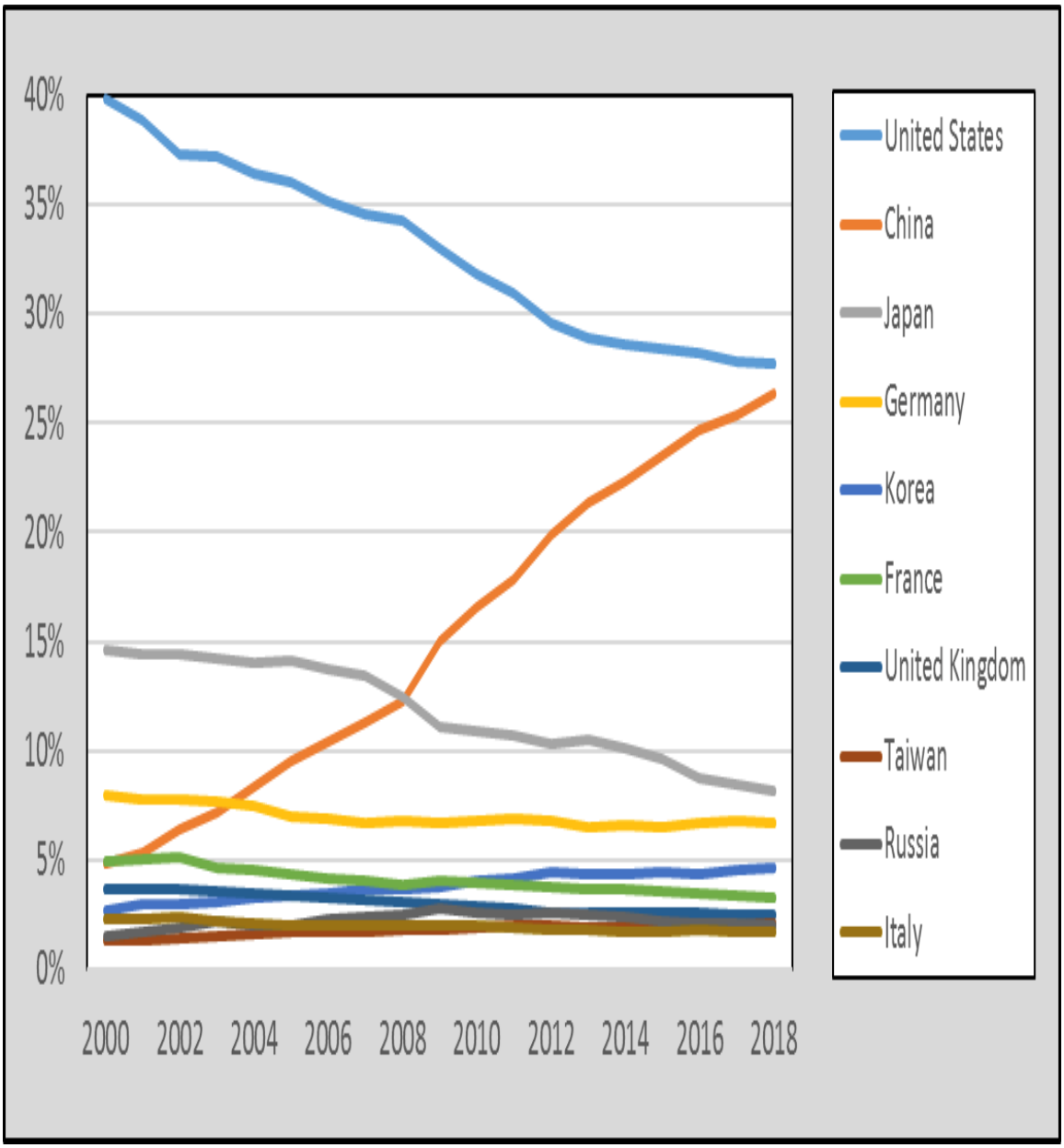


Countries with Highest Expenditure in 2018

Rank	Country	Amount	Rank	Country	Amount
1	United States	$581.6	11	Canada	29.0
2	China	554.3	12	Spain	23.6
3	Japan	171.3	13	Australia	22.6
4	Germany	141.4	14	Turkey	21.7
5	South Korea	98.5	15	Netherlands	21.5
6	France	$68.4	16	Switzerland	19.1
7	United Kingdom	53.1	17	Sweden	18.1
8	Taiwan	43.3	18	Israel	17.7
9	Russia	41.5	19	Belgium	16.5
10	Italy	36.0	20	Austria	16.0

Source: John F. Sargent Jr., "Global Research and Development Expenditures: Fact Sheet," *Congressional Research Service*, April 29, 2020, https://fas.org/sgp/crs/misc/R44283.pdf; CRS Analysis of Organization for Economic Development and Cooperation, *OECD*, https://stats.oecd.org/Index.aspx?DataSetCode=MSTI_PUB.

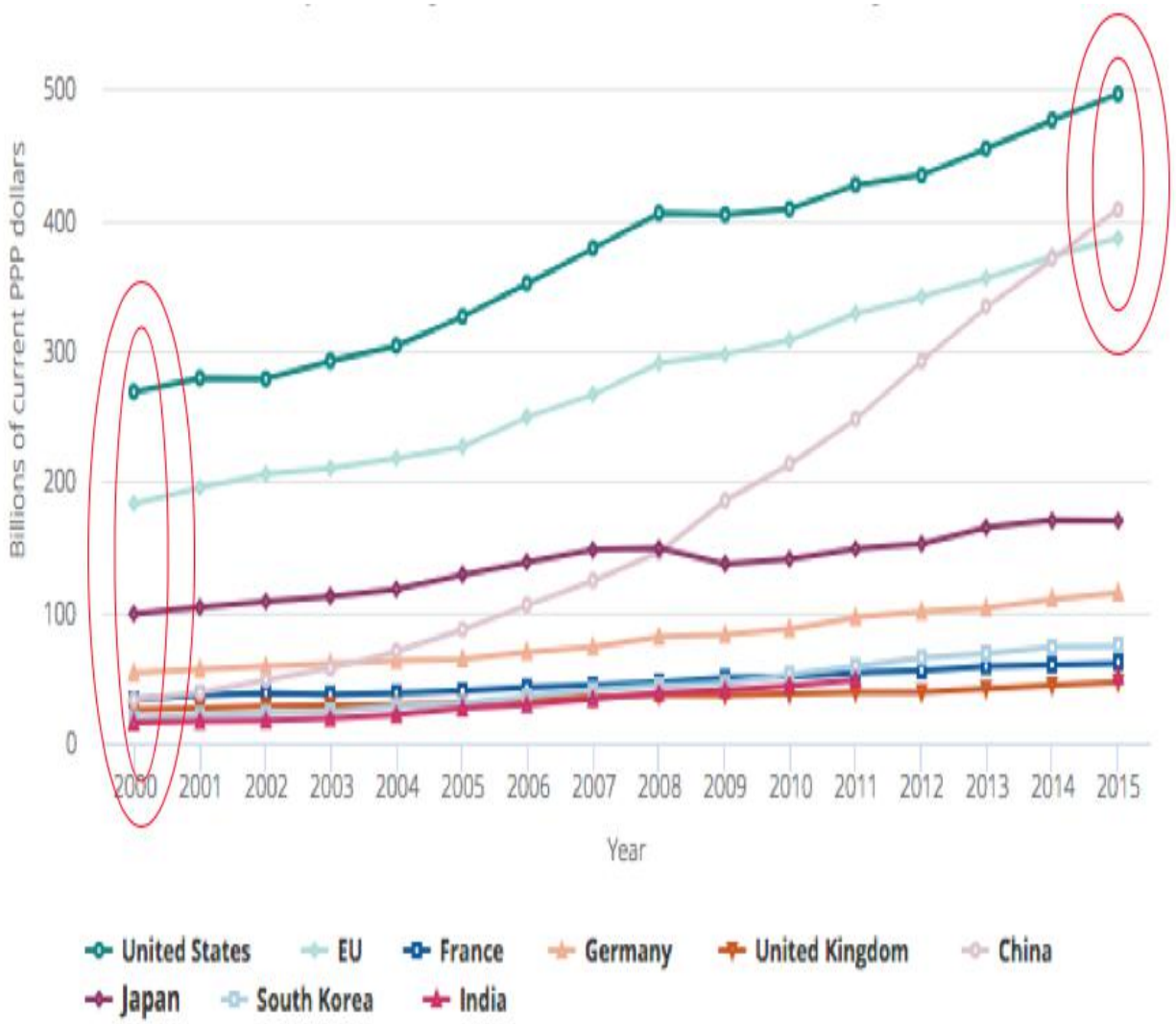
Chart Twenty-Seven: Share of Global R&D of Selected Countries, 2000-2018



Notes: Global R&D includes the expenditures of the OECD countries, Argentina, China, Romania, Russia, Singapore, South Africa, and Taiwan. Share computed in PPP terms. PPP = Purchasing Power Parity. PPP is used to determine the relative value of different currencies and to adjust data from different countries to a common currency allowing direct comparisons among them.

Source: John F. Sargent Jr., "Global Research and Development Expenditures: Fact Sheet," *Congressional Research Service*, April 29, 2020, https://fas.org/sgp/crs/misc/R44283.pdf ; CRS Analysis of Organization for Economic Development and Cooperation, *OECD*, https://stats.oecd.org/Index.aspx?DataSetCode=MSTI_PUB.

Chart Twenty-Eight: Chinese R&D Spending Rises Above that of EU and Challenges the U.S.



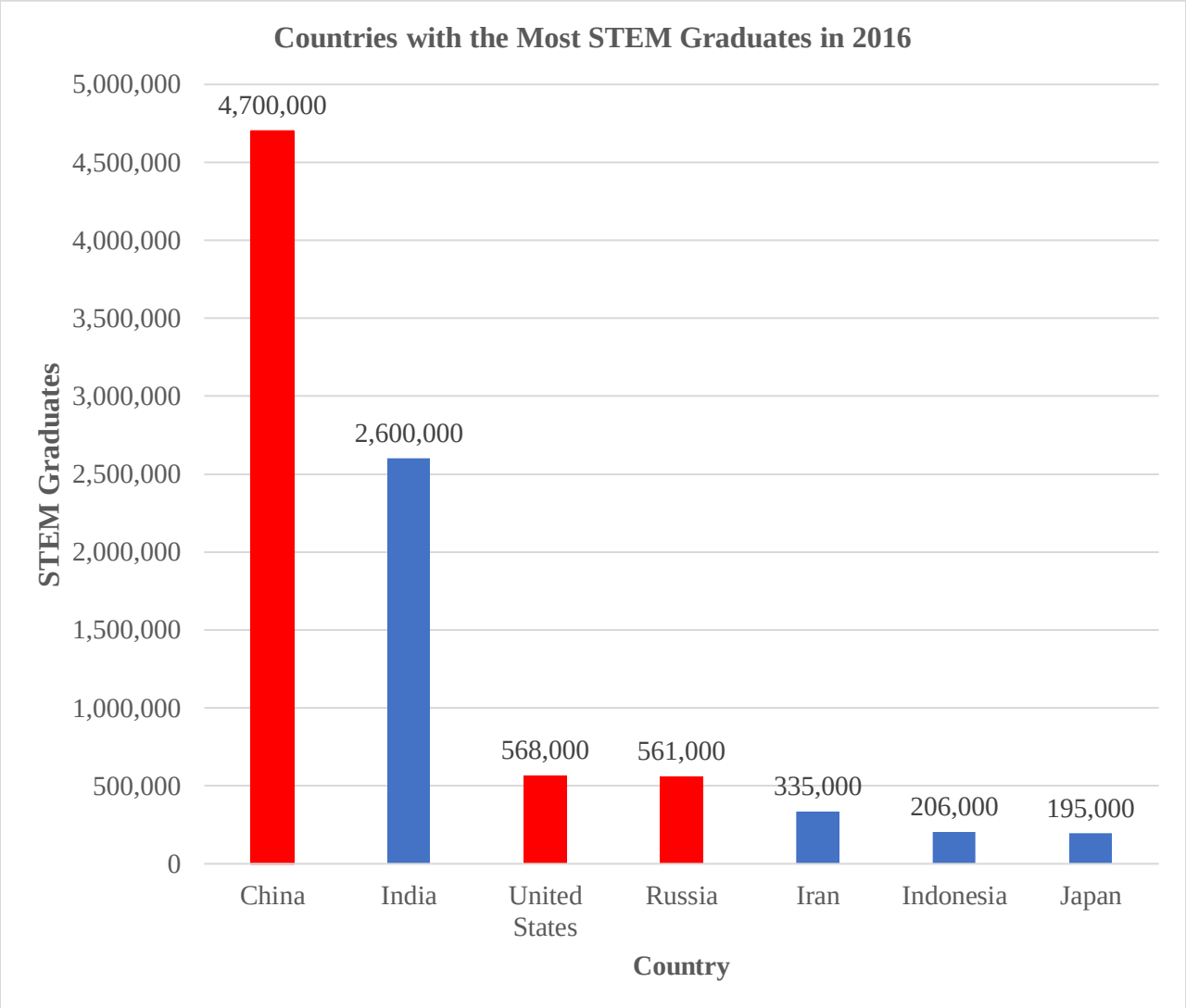
United States and Europe experienced substantial declines in their shares of global R&D (from 37% to 26% in the United States and from 27% to 22% in Europe between 2000 and 2015). During the same period, the economies of East and Southeast Asia—including China, Japan, Malaysia, Singapore, South Korea, Taiwan, and India—saw an increase in their combined global share from 25% to 40%, thus exceeding the respective U.S. and the European R&D shares in 2015.

Source: National Science Foundation, National Center for Science and Engineering Statistics estimates, August 2017. Based on data from the Organization for Economic Co-operation and Development, Main Science and Technology Indicators (2017/1), and the United Nations Educational, Scientific and Cultural Organization (UNESCO), Institute for Statistics database, data.uis.unesco.org. National science Board, Science & Engineering Indicators, 2018, https://nsf.gov/statistics/2018/nsb20181/report/sections/overview/research-publications.

Competition in STEM (Science, Technology, Engineering and Mathematics) Education

Education is yet another key area in civil competition, and one where China already sharply surpassed both the United States and Russia. **Chart Twenty-Nine** shows an estimate by Niall McCarthy of the comparative levels of total STEM education in 2017 – which records students that are active in the STEM fields of each country's respective economies. It does not attempt to assess the relative quality of such education, which remains a key issue, but the end results are striking.

Chart Twenty-Nine: Comparative STEM Graduates in 2016
(Science, Technology, Engineering and Mathematics)



Source: Nial McCarthy, "The Countries With The Most STEM Graduates," *Forbes*, Satistica, February 2, 2017, https://www.forbes.com/sites/niallmccarthy/2017/02/02/the-countries-with-the-most-stem-graduates-infographic/#5bea74d1268a.

The United States has a slight lead in STEM graduates over Russia, but falls far behind China. McCarthy also notes that China was building the equivalent of one university a week, that 40% of Chinese graduates in 2013 had STEM degrees – more than twice the percent in the U.S. – and that the number of Chinese graduates was projected to rise by 300% by 2030 compared to 30% for the U.S.[60]

A now dated study by the National Science Board that examines the trends between 2000 and 2014 – and did not cover Russia – found that China led the United States in basic science and engineering degrees by the year 2000, and it overtook the EU in 2003. In 2014, China granted 1,447,000 university science degrees equivalent to Bachelor's degrees, compared to 377,000 for the U.S. and 569,000 for the EU. China overtook the U.S. in science and engineering doctorates in 2007 – although the EU still led both countries by a large percent in 2014.[61]

A 2019 study conducted by the Organization for Economic Cooperation and Development (OECD) reported that in Russia, the largest share of new entrants at the bachelor level was found in the STEM field (35%) and at the master's level, 25% of students pursued a degree in STEM.[62] Russia also has a significant amount of women in the STEM field, according to a study by the United Nations Educational, Scientific and Cultural Organization, which reported that 41% of people conducting scientific research in Russia are women.[63]

Again, much of the reporting is now dated, and the Coronavirus will have a major impact. An analysis by the Bureau of Labor statistics in 2015 notes, however, that the U.S. employment of STEM graduates is certain to remain an issue of significant concern:[64]

> Depending on the definition, the size of the STEM workforce can range from 5 percent to 20 percent of all U.S. workers. Although fields such as computer programming and mechanical engineering are generally considered STEM fields, there is less consensus on areas such as medicine, architecture, science education, social sciences, and blue-collar manufacturing work. In this article, "STEM" refers to the science, engineering, mathematics, and information technology domain detailed by the Standard Occupation Classification Policy Committee, but excluding managerial and sales occupations. Under this definition, postsecondary teachers in STEM fields and lab technicians are considered STEM workers, but workers in skilled trades, such as machinists, are not. Our analysis focuses on graduates with postsecondary education within this STEM domain.
>
> Numerous reports detail the growing concern of policymakers and industry leaders regarding a shortage in the STEM workforce believed necessary to sustain the U.S. innovation enterprise, global competitiveness, and national security. Most notable is the National Academies' report *Rising Above the Gathering Storm*, which called for improvements in kindergarten through 12th-grade science and mathematics education and increasing the attractiveness of higher education, among other recommendations. The report highlighted troubling issues in a number of areas: low STEM retention rates, a relative decline in the number of U.S. citizens enrolled in science and engineering graduate school, and lower percentages of STEM graduates than those of other developed countries. These sentiments were echoed in a 2012 report by the U.S. Congress Joint Economic Committee which stated that the current STEM workforce was falling short of demand in both STEM and non-STEM occupations. According to the President's Council of Advisors on Science and Technology, the United States would need to increase its yearly production of undergraduate STEM degrees by 34 percent over current rates to match the demand forecast for STEM professionals.
>
> There are, however, many who hold a different view. For example, Michael S. Teitelbaum, vice president of the Sloan Foundation, opined that there are no general shortages of scientists and engineers. He went even further, to state that there is evidence suggesting surpluses: there are significantly more science and engineering graduates in the United States than attractive positions available in the workforce. Similarly, B. Lindsay Lowell and Harold Salzman have pointed to the disproportionate percentage of bachelor's degree STEM holders not employed in STEM occupations.

> Looking at the STEM labor market, Salzman and colleagues concluded that, for every two students graduating with a U.S. STEM degree, only one is employed in STEM and that 32 percent of computer science graduates not employed in information technology attributed their situation to a lack of available jobs. In 2014, the U.S. Census Bureau reported that 74 percent of those who have a bachelor's degree in a STEM major are not employed in STEM occupations.

In contrast, China has used its state-driven system to create high levels of employment – although the statistics involved seem highly uncertain and the issue of comparative job quality and the impact is as uncertain as the relative quality of patents and science/engineering publications.

The same OECD study reported that Russian doctoral graduates had the highest employment rate at 89%, those with a master's degree had an 86% employment rate, and those with a bachelor's degree had an 88% employment rate – although it did not specify which degrees were STEM. [65] However, it is assumed that one reason why women in Russia participate in STEM fields more is because there are greater opportunities for future employment.[66] Nonetheless, more concrete analysis must be conducted on the future rates of employment, especially in the STEM field in Russia.

Other assessments show a major rise in Chinese patents and in Western citations of science and technical journals of authors from given countries. The DNI's annual threat analysis for 2019 showed that such citations left China last in the top 12 countries in 1996 and rising to second in 2016 – where a large part of the remaining U.S. lead came from medical articles. Citations of U.S. articles had also dropped from some 52% of the total in 1996 to some 32% in 2016, while citations of Chinese articles rose from 2-3% in 1996 to 22-23% in 2016. Relative quality remain a key issue, but China is clearly making striking g progress while Russia does not rank among the top twelve.[67]

Accordingly, this remains an area of key concern, and one that any serious examination of civil competition must address in far more depth. Large numbers of Chinese student have, for example, come to the U.S. for a STEM education or have taken jobs in the U.S. for a limited period of time. If the U.S. is to compete over the longer term, it must seriously examine these trends and determine whether new incentives are needed in U.S. education and job creation.

The Impact of Civil Competition

China now has little incentive to reduce its current efforts in civil competition while it attempts to recover from the Coronavirus crisis. In contrast, Russia will face significant resource constraints, and the U.S. has talked far more about investing more in technology than it has actually executed. The U.S. has failed to implement many of its stated goals before the Coronavirus crisis, and once again, its transparent politics and civil demands for economic relief may now limit its future efforts. This is a critical area for U.S. national security in both military and economic competition, but studies and good intentions are a miserable substitute for action.

China and Russia have clearly benefited from the fact that the U.S. defense sector and virtually every sector of advanced technology in America's civil economy are open enough to be vulnerable to industrial and military espionage. The impact of such espionage should not, however, be exaggerated, and posturing to condemn it is no substitute for preventing it. Industrial and technological espionage has been a normal part of interstate competition throughout military history, especially since the Napoleonic wars. Condemnation may serve some propaganda purpose, but it can generally be countered with even the most implausible deniability.

And once again, complaining about Chinese and Russian behavior is not a form of developing an agreed understanding of the scale and nature of the problems involved or of creating meaningful plans and actions to deal with them. As is the case in most areas where the U.S. needs to translate its national strategy into action, there is a critical lack of detailed open source analysis that compares the three very different civil-military approaches that the United States, China, and Russia take to technological development, the military industry, and the linkages between civil and military efforts.

Much of the analysis that does exist covers only limited sectors or topics, and many of the efforts that do try to make broader comparisons have significant ideological biases – such as the U.S. side which simply assumes that capitalism will be more successful. As is always the case, ideology is no substitute for objective analysis, and this is illustrated all too clearly in the next chapter of this analysis.

Key Areas of Civil Competition and Their Impact on Military and Strategic Competition

It is also important to note that the strategic value of many areas of civil competition are not always apparent until they are actually exploited, giving China and Russia more time to execute a strategy or integrate the operations with a form of military competition. Many technologies and high technology firms/research efforts are also "dual capable" in the sense that advances in the civil sector offer military and civil benefits as well as the ability to collect intelligence and support information warfare.

For example, Russia targeted a key NATO partnership by selling its S-400 air defense system to Turkey. With the U.S. F-35 fighter jets operating in the same zone as the Russian S-400, Russia would have the capability to gain highly sensitive information on the U.S. development of its fighter jets, while also straining a critical relationship between the U.S. and Turkey.

Current Russian operations in Georgia and Ukraine have focused on the political dimension while making relatively limited use of military force. Russia's use of separatist forces in South Ossetia, Abkhazia, and Donbass give Russia leverage to create domestic tensions in Georgia and Ukraine while also evading full blame.

More broadly, Russia has successfully used civil media and the Internet to attack the U.S. and many other Western countries through political and information warfare. Specifically, both China and Russia have made a concerted effort to spread disinformation and propaganda about the Coronavirus and redirect blame to the United States. High volumes of disinformation can serve as a distraction, and despite calls to cooperate jointly with the U.S. in order to find a solution for the Coronavirus, China is still carrying out aggressive actions in the South China Sea.

Russia has also exploited its role as a major energy supplier to Europe. It has used aid – alongside political efforts to manipulate international aid and peace negotiations – to play a political and military spoiler role in Syria and Libya. It has joined with China in the Shanghai Cooperation Council by shaping its trade and investment policies to retain its influence in Central Asia, send both political and military aid to play a spoiler role in Venezuela, and use arms transfers and loans broadly in order to gain strategic leverage.

With the upcoming U.S. presidential elections in November, Russia may again attempt to interfere and meddle. With the use of social media accounts to dissuade people to vote and cause disruptions

to both political parties, Russia will have an overall effect on the future U.S. military posture, which will depend on the incoming administration.

As stated earlier, a subversive tactic that is not new to just gray zone operations is the use of espionage. Clandestine operations from Russia and China, however, can now take any form – even ones that are as innocuous as a cultural program exchange. The U.S. needs to recognize that espionage is an extension of competition – albeit a deceptive form of competition – which has increasingly hidden under the guise of routine civil sector activity but can actually be used for military purposes. China, for instance, has been notorious for stealing intellectual property from U.S. firms and sending China's People Liberation Army (PLA) officers covertly as doctors or researchers.[68]

The Impact of Civil Competition on Allies and Other states

Like military and economic competition, Chinese and Russian Civil competition is global, not simply focused on the United States. U.S. strategic partnerships in Asia and the MENA region, as well as the U.S. membership in NATO, all play an important role in countering competition with Russia and China. However, their civil dimension is as important as their military dimension. The acts of burden-sharing and unreliability, however, make U.S. allies less willing to aid the United States, and instead more open to cooperation with Russia and China – especially since both of those countries offer appealing economic and trade opportunities.

The United States must also be wary of growing alliances between its allies and China or Russia. Furthermore, it also must not take its preexisting partnerships for granted. Japan, for instance, offered $653 million in subsidies for companies to relocate from China, which at face value represents an economic break between Japan and China.[69] These adjustments, however, only account for 1% of Japan's total investment for China, and are more beneficial for Japan's diversification of its supply chain rather than a resonating punishment to China.

China also uses Western and U.S. allies to further legitimize China's foreign policy and interests. China, for example, expanded its relationships in Europe to advance Chinese priorities. China has already established partnerships known as "friendship groups" with the EU, Italy, and the Czech Republic. In 2016, after the European parliament received a Chinese government-guided tour, a private conversation was released in which the EU parliament confirmed that Tibet was always a part of China.[70]

The U.S. needs to acknowledge that if it delays deliverables and support of its allies, there may be a risk of emboldening China or Russia to pursue even further aggressive action. The Pentagon recently drafted a proposal to withdraw U.S. presence in South Korea below the existing level of 28,500 personnel.[71] Instead of committing to mutual security in the region, the United States is decreasing its presence, which allows China to up the ante in the region, intimidates Taiwan, and encourages South Korea to turn to Russia or China for economic partnerships. Critically considering the effects of civil competition adds a new perspective to the U.S. support of its allies.

Not only are allies integral against growing Chinese and Russian influence, but the U.S. needs to uphold its commitments. The U.S. has established its partnerships so far, including monitoring the East China Sea Islands, also known as the Senkaku Islands, with Japan against recent Chinese incursions.[72] It is imperative that the United States reaffirms its commitments to its allies – and in this case, especially so, as Japan hosts the biggest concentration of U.S. forces in the region.

VII. Shifting from Competition to Confrontation

The change in the U.S. relationship with China became all too clear in the months of June and July 2020, when senior U.S. officials suddenly gave a series of speeches that marked the first real attempt to define the key areas for U.S. civil and economic competition with China since the U.S. had issued its new national strategy in 2017. They did cite numerous examples of Chinese civil competition, which illustrated the range of Chinese civil and economic actions that the U.S. officially condemned. And while none of the speeches addressed Russia, it was clear that many of these complaints applied to Russia as well.

The problem with the speeches, however, was that they also launched a wide-ranging set of ideological attacks on the Chinese leadership and the Chinese Communist Party (CCP) – many of which applied more to Soviet Russia than modern China. They did not, however, present any practical strategy for dealing with these complaints and charges, and they effectively committed the U.S. to shifting from competition to confrontation without advancing any really strategy for doing so.

Competition from Information Warfare and Propaganda

The first speech was given by National Security Advisor Robert O'Brien on June 26, 2020. His speech made broad charges about the behavior of the Chinese Communist Party and criticized the lack of resistance by American businesses. He cited the following examples of Chinese use of civil propaganda, information warfare, and misinformation campaigns:[73]

> Over the past decade, the Party has invested billions of dollars into overseas propaganda operations to great effect. The CCP has moved to eliminate 'unfriendly' Chinese language media outlets worldwide, and is close to succeeding. Nearly every Chinese language news outlet in the U.S. is either owned by, or works closely with the Party—and it is making inroads into English language media as well. There are more than a dozen radio stations in cities across the country where Americans hear subtle pro-Beijing propaganda on their FM radio.
>
> Recently, Chinese propaganda persuaded so many Americans that a U.S. solider had brought the coronavirus to Wuhan—as opposed to Wuhan sending the virus to the rest of the world (a complete fabrication by the CCP) that this soldier and her family needed a personal security detail to protect them from death threats. This situation occurred in Maryland.
>
> On TikTok, a Chinese-owned social media platform with over 40 million American users—probably a lot of your kids and younger colleagues– accounts criticizing CCP policies are routinely removed or deleted.
>
> Last week, Twitter announced the suspension of more than 23,000 CCP linked accounts for spreading propaganda on Hong Kong and COVID-19. This latest suspension was in addition to last August's removal of more than 150,000 CCP linked accounts that were used to spread anti-American disinformation and generate the illusion of popular support for Beijing's policies in the United States. These are just the accounts Twitter caught. How many are still out there undetected?
>
> In March, the CCP expelled American journalists working for the New York Times, the Wall Street Journal, and the Washington Post, almost fully eliminating independent reporting from within China on the Wuhan virus.
>
> In addition to influencing what information American citizens receive regarding China, the CCP is increasingly using its leverage to police American speech. When the University of California at San Diego hosted the Dalai Lama as a commencement speaker in 2017, Beijing banned Chinese students from visiting UCSD on government funds.

When the general manager of the Houston Rockets tweeted his support for the peaceful Hong Kong protesters, the CCP announced its team's games would not be shown on Chinese TV and used its economic power to pressure others in basketball, including star players, to criticize the tweet on behalf of Beijing.

Under pressure from the CCP, Marriott, and American, Delta, and United Airlines all removed references to Taiwan from their corporate websites. Mercedes Benz even apologized for posting an inspirational quote from the Dalai Lama on social media.

Beijing has used its financial might and market access to pressure Hollywood into self-censorship, incentivizing directors and producers to avoid topics that might not make it past the country's censors in China. For example, the Japanese and Taiwanese flags were dropped from Tom Cruise's flight jacket in the upcoming Top Gun sequel "Maverick." MGM digitally changed the identities, post-production, of the invading military from China to North Korea in the "Red Dawn" remake.

The CCP is seeking leverage over individual Americans as well. The Party is collecting your most intimate data—your words, your actions, your purchases, your whereabouts, your health records, your social media posts, your texts, and mapping your network of friends, family, and acquaintances.

The CCP accomplishes this goal, in part, by subsidizing hardware, software, telecommunications, and even genetics companies. As a result, corporations such as Huawei and ZTE undercut competitors on price and install their equipment around the globe at a loss. This has the side effect of putting out of business American manufacturers of telecom hardware and has made it very difficult for Nokia and Ericsson. Why do they do it? Because it is not telecom hardware or software profits the CCP are after, it is your data. They use "backdoors" built into the products to obtain that data.

When the Chinese Communist Party cannot buy your data, it steals it. In 2014, the CCP hacked Anthem insurance, collecting sensitive information on 80 million Americans. In 2015, the CCP hacked the Office of Personnel Management, which holds security clearance information, acquiring sensitive data on 20 million Americans who work for the federal government. In 2017, it hacked Equifax, obtaining the names, birthdates, social security numbers, and credit scores of 145 million Americans.

In 2019, the CCP hacked Marriot, gathering information on 383 million guests, including their passport numbers. And, in 2016, a Chinese company even bought the dating app Grindr to harvest its data, including the HIV status of users, before the U.S. government forced a divestiture on national security grounds. These are just a few of the instances we know about.

How will the Chinese Communist Party use this data? In the same way it uses data within China's borders: to target, to flatter, to cajole, to influence, to coerce, and to even blackmail individuals to say and do things that serve the Party's interests. This is 'micro targeting' beyond an advertiser's wildest dreams. China, unlike advertisers, will not be stopped by government regulations. The Chinese Communist Party simply wants to know everything about you—just as it likes to know almost everything about every individual living in China.

In addition to propaganda and influence operations, the Chinese Communist Party uses trade to coerce compliance with its dictates. When Australia called for an independent investigation of the coronavirus' origins and spread, the Chinese Communist Party threatened to stop buying Australian agricultural products and to prevent Chinese students and tourists from traveling to Australia. When Australia refused to relent, Beijing put these threats into force, imposing an 80% tariff on Australian barley exports.

International organizations are also part of China's plan. China has sought leadership positions within many global bodies. China now heads four out of fifteen UN specialized agencies, more than the U.S., UK, France, and Russia, the other members of the permanent members of the U.N. Security Council, combined. The PRC uses these leaders to force the international bodies to parrot Beijing's talking points and to install Chinese telecommunications equipment in their facilities.

For example, since Zhao Houlin of the International Telecommunications Union took his post he began to aggressively promote Huawei sales. Secretary-General Fang Liu of the International Civil Aviation Organization has blocked Taiwan's participation in General Assembly meetings and covered up a Chinese hack of the organization. The Party has used China's membership on the UN Human Rights Council to prevent criticism of its abuses in Xinjiang and Hong Kong.

> The CCP's reach extends to heads of international organizations who are not themselves Chinese officials. Under Beijing's thumb, and at an unacceptable cost to human life, Director-General Tedros of the World Health Organization dutifully used Chinese talking points on the Wuhan virus. As late as mid-January, he claimed there was no human-to-human transmission of the disease. He opposed international travel restrictions. At the same time, Tedros praised China's own domestic travel restrictions on Wuhan residents. In other words, they could travel overseas, but they could not travel and potentially take the virus to Beijing or Shanghai. These CCP tactics in international organizations, as we have seen with the coronavirus, are a major cause of concern not just for the United States, but to the world.

While the O'Brien speech – and the others that followed – focused on China, they all could just as easily have focused on similar Russian activities – some of which provide a mirror image of China's activities; also target the U.S. and other major elections; and have a major impact in Europe, the MENA region, and South Asia.

Competition in Cyber, Economic Espionage, Hacking, Manipulating Academia, and Research Activities

FBI Director Cristopher Wray gave the second speech on July 7, 2020, and focused on a different set of Chinese activities – some of which again have a Russian mirror image, although at times they are more focused on Europe than the United States – which includes:[74]

> The greatest long-term threat to our nation's information and intellectual property, and to our economic vitality, is the counterintelligence and economic espionage threat from China. It's a threat to our economic security—and by extension, to our national security… I will provide more detail on the Chinese threat than the FBI has ever presented in an open forum. This threat is so significant that the attorney general and secretary of state will also be addressing a lot of these issues in the next few weeks. But if you think these issues are just an intelligence issue, or a government problem, or a nuisance largely just for big corporations who can take care of themselves—you could not be more wrong.
>
> It's the people of the United States who are the victims of what amounts to Chinese theft on a scale so massive that it represents one of the largest transfers of wealth in human history. If you are an American adult, it is more likely than not that China has stolen your personal data.
>
> In 2017, the Chinese military conspired to hack Equifax and made off with the sensitive personal information of 150 million Americans—we're talking nearly half of the American population and most American adults—and as I'll discuss in a few moments, this was hardly a standalone incident.
>
> Our data isn't the only thing at stake here—so are our health, our livelihoods, and our security. We've now reached the point where the FBI is opening a new China-related counterintelligence case about every 10 hours. Of the nearly 5,000 active FBI counterintelligence cases currently underway across the country, almost half are related to China. And at this very moment, China is working to compromise American health care organizations, pharmaceutical companies, and academic institutions conducting essential COVID-19 research.
>
> But before I go on, let me be clear: This is not about the Chinese people, and it's certainly not about Chinese Americans. Every year, the United States welcomes more than 100,000 Chinese students and researchers into this country. For generations, people have journeyed from China to the United States to secure the blessings of liberty for themselves and their families—and our society is better for their contributions. So, when I speak of the threat from China, I mean the government of China and the Chinese Communist Party.
>
> …First: We need to be clear-eyed about the scope of the Chinese government's ambition. China—the Chinese Communist Party—believes it is in a generational fight to surpass our country in economic and technological leadership…China is engaged in a whole-of-state effort to become the world's only superpower by any means necessary.
>
> …The second thing the American people need to understand is that China uses a diverse range of sophisticated techniques—everything from cyber intrusions to corrupting trusted insiders. They've even engaged in outright physical theft. And they've pioneered an expansive approach to stealing innovation

through a wide range of actors—including not just Chinese intelligence services but state-owned enterprises, ostensibly private companies, certain kinds of graduate students and researchers, and a whole variety of other actors working on their behalf.

To achieve its goals and surpass America, China recognizes it needs to make leaps in cutting-edge technologies. But the sad fact is that instead of engaging in the hard slog of innovation, China often steals American intellectual property and then uses it to compete against the very American companies it victimized—in effect, cheating twice over. They're targeting research on everything from military equipment to wind turbines to rice and corn seeds.

Through its talent recruitment programs, like the so-called Thousand Talents Program, the Chinese government tries to entice scientists to secretly bring our knowledge and innovation back to China—even if that means stealing proprietary information or violating our export controls and conflict-of-interest rules.

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Economic Espionage

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Take the case of scientist Hongjin Tan, for example, a Chinese national and American lawful permanent resident. He applied to China's Thousand Talents Program and stole more than $1 billion—that's with a "b"—worth of trade secrets from his former employer, an Oklahoma-based petroleum company, and got caught. A few months ago, he was convicted and sent to prison.

Or there's the case of Shan Shi, a Texas-based scientist, also sentenced to prison earlier this year. Shi stole trade secrets regarding syntactic foam, an important naval technology used in submarines. Shi, too, had applied to China's Thousand Talents Program, and specifically pledged to "digest" and "absorb" the relevant technology in the United States. He did this on behalf of Chinese state-owned enterprises, which ultimately planned to put the American company out of business and take over the market.

In one of the more galling and egregious aspects of the scheme, the conspirators actually patented in China the very manufacturing process they'd stolen, and then offered their victim American company a joint venture using its own stolen technology. We're talking about an American company that spent years and millions of dollars developing that technology, and China couldn't replicate it—so, instead, it paid to have it stolen.

And just two weeks ago, Hao Zhang was convicted of economic espionage, theft of trade secrets, and conspiracy for stealing proprietary information about wireless devices from two U.S. companies. One of those companies had spent over 20 years developing the technology Zhang stole.

These cases were among more than a thousand investigations the FBI has into China's actual and attempted theft of American technology—which is to say nothing of over a thousand more ongoing counterintelligence investigations of other kinds related to China. We're conducting these kinds of investigations in all 56 of our field offices. And over the past decade, we've seen economic espionage cases with a link to China increase by approximately 1,300 percent.

The stakes could not be higher, and the potential economic harm to American businesses and the economy as a whole almost defies calculation.

Clandestine Efforts

As National Security Advisor O'Brien discussed in his June remarks, the Chinese government is also making liberal use of hacking to steal our corporate and personal data—and they're using both military and non-state hackers to do it. The Equifax intrusion I mentioned just a few moments ago, which led to the indictment of Chinese military personnel, was hardly the only time China stole the sensitive personal information of huge numbers of the American public.

For example, did any of you have health insurance through Anthem or one of its associated insurers? In 2015, China's hackers stole the personal data of 80 millions of that company's current and former customers.

Or maybe you're a federal employee—or you used to be one, or you applied for a government job once, or a family member or roommate did. Well, in 2014, China's hackers stole more than 21 million records from OPM, the federal government's Office of Personnel Management.

Why are they doing this? First, China has made becoming an artificial intelligence world leader a priority, and these kinds of thefts feed right into China's development of artificial intelligence tools.

Compounding the threat, the data China stole is of obvious value as they attempt to identify people for secret intelligence gathering. On that front, China is using social media platforms—the same ones Americans use to stay connected or find jobs—to identify people with access to our government's sensitive information and then target those people to try to steal it.

Just to pick one example, a Chinese intelligence officer posing as a headhunter on a popular social media platform recently offered an American citizen a sizeable sum of money in exchange for so-called "consulting" services. That sounds benign enough until you realize those "consulting" services were related to sensitive information the American target had access to as a U.S. military intelligence specialist.

Now that particular tale has a happy ending: The American citizen did the right thing and reported the suspicious contact, and the FBI, working together with our armed forces, took it from there. I wish I could say that all such incidents ended that way.

Threats to Academia

It's a troublingly similar story in academia.

Through talent recruitment programs like the Thousand Talents Program I mentioned just a few moments ago, China pays scientists at American universities to secretly bring our knowledge and innovation back to China—including valuable, federally funded research. To put it bluntly, this means American taxpayers are effectively footing the bill for China's own technological development. China then leverages its ill-gotten gains to undercut U.S. research institutions and companies, blunting our nation's advancement and costing American jobs. And we are seeing more and more of these cases.

In May alone, we arrested both Qing Wang, a former researcher with the Cleveland Clinic who worked on molecular medicine and the genetics of cardiovascular disease, and Simon Saw-Teong Ang, a University of Arkansas scientist doing research for NASA. Both of these guys were allegedly committing fraud by concealing their participation in Chinese talent recruitment programs while accepting millions of dollars in American federal grant funding.

That same month, former Emory University professor Xiao-Jiang Li pled guilty to filing a false tax return for failing to report the income he'd received through China's Thousand Talents Program. Our investigation found that while Li was researching Huntington's disease at Emory, he was also pocketing half a million unreported dollars from China.

In a similar vein, Charles Lieber, chair of Harvard's Department of Chemistry and Chemical Biology, was indicted just last month for making false statements to federal authorities about his Thousand Talents participation. The United States has alleged that Lieber concealed from both Harvard and the NIH his position as a strategic scientist at a Chinese university—and the fact that the Chinese government was paying him, through the Wuhan Institute of Technology, a $50,000 monthly stipend, more than $150,000 in living expenses, and more than $1.5 million to establish a laboratory back in China.

Malign Foreign Influence

There's more. Another tool China and the Chinese Communist Party use to manipulate Americans is what we call malign foreign influence.

Now, traditional foreign influence is a normal, legal diplomatic activity typically conducted through diplomatic channels. But malign foreign influence efforts are subversive, undeclared, criminal, or coercive attempts to sway our government's policies, distort our country's public discourse, and undermine confidence in our democratic processes and values.

China is engaged in a highly sophisticated malign foreign influence campaign, and its methods include bribery, blackmail, and covert deals. Chinese diplomats also use both open, naked economic pressure and seemingly independent middlemen to push China's preferences on American officials.

Just take one all-too-common illustration: Let's say China gets wind that some American official is planning to travel to Taiwan—think a governor, a state senator, a member of Congress. China does not want that to happen, because that travel might appear to legitimize Taiwanese independence from China—and legitimizing Taiwan would, of course, be contrary to China's "One China" policy.

So what does China do? Well, China has leverage over the American official's constituents—American companies, academics, and members of the media all have legitimate and understandable reasons to want access to Chinese partners and markets. And because of the authoritarian nature of the Chinese Communist Party, China has immense power over those same partners and markets. So, China will sometimes start by trying to influence the American official overtly and directly. China might openly warn that if the American official goes ahead and takes that trip to Taiwan, China will take it out on a company from that official's home state by withholding the company's license to manufacture in China. That could be economically ruinous for the company, would directly pressure the American official to alter his travel plans, and the official would know that China was trying to influence him.

That would be bad enough. But the Chinese Communist Party often doesn't stop there; it can't stop there if it wants to stay in power—so it uses its leverage even more perniciously. If China's more direct, overt influence campaign doesn't do the trick, they sometimes turn to indirect, covert, deceptive influence efforts.

To continue with the illustration of the American official with travel plans that the Chinese Communist Party doesn't like, China will work relentlessly to identify the people closest to that official—the people that official trusts most. China will then work to influence those people to act on China's behalf as middlemen to influence the official. The co-opted middlemen may then whisper in the official's ear and try to sway the official's travel plans or public positions on Chinese policy. These intermediaries, of course, aren't telling the American official that they're Chinese Communist Party pawns—and worse still, some of these intermediaries may not even realize they're being used as pawns, because they, too, have been deceived.

Ultimately, China doesn't hesitate to use smoke, mirrors, and misdirection to influence Americans.

Similarly, China often pushes academics and journalists to self-censor if they want to travel into China. And we've seen the Chinese Communist Party pressure American media and sporting giants to ignore or suppress criticism of China's ambitions regarding Hong Kong or Taiwan. This kind of thing is happening over and over, across the United States.

And I will note that the pandemic has unfortunately not stopped any of this—in fact, we have heard from federal, state, and even local officials that Chinese diplomats are aggressively urging support for China's handling of the COVID-19 crisis. Yes, this is happening at both the federal and state levels. Not that long ago, we had a state senator who was recently even asked to introduce a resolution supporting China's response to the pandemic.

The punchline is this: All of these seemingly inconsequential pressures add up to a policymaking environment in which Americans find themselves held over a barrel by the Chinese Communist Party.

Threats to the Rule of Law

All the while, China's government and Communist Party have brazenly violated well-settled norms and the rule of law.

Since 2014, Chinese General Secretary Xi Jinping has spearheaded a program known as "Fox Hunt." Now, China describes Fox Hunt as some kind of international anti-corruption campaign—it is not. Instead, Fox

> Hunt is a sweeping bid by General Secretary Xi to target Chinese nationals whom he sees as threats and who live outside China, across the world. We're talking about political rivals, dissidents, and critics seeking to expose China's extensive human rights violations.
>
> Hundreds of the Fox Hunt victims that they target live right here in the United States, and many are American citizens or green card holders. The Chinese government wants to force them to return to China, and China's tactics to accomplish that are shocking. For example, when it couldn't locate one Fox Hunt target, the Chinese government sent an emissary to visit the target's family here in the United States. The message they said to pass on? The target had two options: return to China promptly, or commit suicide. And what happens when Fox Hunt targets refuse to return to China? In the past, their family members both here in the United States and in China have been threatened and coerced, and those back in China have even been arrested for leverage.

Competition as a Global Economic Challenge

The U.S. Attorney General William Barr delivered the third speech on July 17, 2020. It was one that attacked China's leadership and the Communist Party in even more direct terms,

> I'm privileged to speak here today about what may prove to be the most important issue for our nation and the world in the twenty-first century and that is, the United States' response to the global ambitions of the Chinese Communist Party. The CCP rules with an iron fist over one of the great ancient civilizations of the world. It seeks to leverage the immense power, productivity, and ingenuity of the Chinese people to overthrow the rule-based international system and to make the world safe for dictatorship. How the United States responds to this challenge will have historic implications and will determine whether the United States and its liberal democratic allies will continue to shape their own destiny or whether the CCP and its autocratic tributaries will continue, will control the future. Since the 1890's, at least, the United States has been the technological leader of the world. And from that prowess, has come our prosperity, the opportunity for generations of Americans, and our security. It's because of that that we were able to play such a pivotal role in world history, but turning back the threat of fascism and the threat of communism. What's at stake these days is whether we can maintain that leadership position and that technological leadership. Are we going to be the generation that has allowed that to be stolen- which is really stealing the future of our children and our grandchildren?
>
> Several weeks ago, National Security Advisor Robert O'Brien spoke about the CCP's ideology and global ambitions. He declared, and I agree, that "the days of American passivity and naivety regarding the People's Republic of China are over." And last week, the FBI Director Chris Wray, described how the CCP pursues its ambitions through the nefarious and even illegal conduct, including industrial espionage, theft, extortion, cyberattacks, and malign influence activities. In the coming days, you will hear from Secretary Mike Pompeo, who will sum up what is at stake for the United States and the free world. Now, Chris Wray, told me that shortly after his speech last week, one of the leaders of the Chinese Communist Party pronounced that his speech was particularly disgusting. I told him that I was going to aim to be despicable, but I'll settle for especially disgusting. But no matter how the Chinese seek to characterize it I do hope that my speech and Mike Pompeo speech will encourage the American people to reevaluate their relationship with China, so long as it continues to be ruled by the Chinese Communist Party. It is fitting that were here today at the Ford Presidential Museum. Gerald Ford served in the highest echelons of the government at the dawn of America's reengagement with China, which began obviously with President Nixon in 1972, and three years later in 1975, President Ford visited China for a summit with PRC leaders including Mao Zedong.
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> At the time it was unthinkable that China would emerge after the Cold War as a near-peer competitor of the United States. And even then, there were signs of China's immense latent power. In the joint report of their visit to China in 1972, House Majority Leader Hale Boggs and then minority leader Gerald Ford wrote: "If she manages to achieve as she aspires, China in the next half century can emerge as a self-sufficient power of a billion people… this last impression – of the reality of China's colossal potential – is perhaps the most vivid of our journey. As our small party traveled through that boundless land, this sense of a giant stirring, a dragon waking, gave us much to ponder." It is now nearly fifty years later and the pressing pondering as of these two congressmen have come to pass.
>
> Deng Xiaoping, whose economic reform launched China's remarkable rise had a famous motto: "hide your strength and bide your time." That is precisely what China has done. China's economy has quietly grown

from about 2 percent of the world's GDP in 1980, to nearly 20 percent today. And by some estimates based on purchasing parity, the Chinese economy is already larger than ours. The General Secretary of the Chinese Communist Party, Xi Jinping, who has centralized power to a degree not seen since the dictatorship of Mao Zedong, now speaks openly of China moving closer to the center stage, building a socialism that is superior to capitalism, and replacing the American dream with the Chinese solution. China is no longer hiding it strength nor biding its time. From the perspective of its communist rulers, China's time has arrived.

Barr then focused on what he called an "economic blitzkrieg—an aggressive, orchestrated, whole-of-government (indeed, whole-of-society) campaign to seize the commanding heights of the global economy and to surpass the United States as the world's preeminent technological superpower."

A centerpiece of this effort is the Chinese Communist Party's "Made in China 2025" initiative, a plan for PRC domination of high-tech industries like robotics, advanced information technology, aviation, and electric vehicles, and many other technologies. Backed by hundreds of billions of dollars in subsidies, this initiative poses a real threat to U.S. technological leadership. Despite World Trade Organization rules prohibiting quotas for domestic output, "Made in China 2025" sets targets for domestic market share (sometimes as high as 70 percent) in core components and basic materials for industries such as robotics and telecommunications. It is clear that the PRC seeks not merely to join the ranks of other advanced industrial economies, but to replace them altogether.

"Made in China 2025" is the latest iteration of the PRC's state-led, mercantilist economic model. For American companies in the global marketplace, free and fair competition with China has long been a fantasy. To tilt the playing field to its advantage, China's communist government has perfected a wide array of predatory and often unlawful tactics: currency manipulation, tariffs, quotas, state-led strategic investment and acquisitions, theft and forced transfer of intellectual property, state subsidies, dumping, cyberattacks, and industrial espionage. About 80% of all federal economic espionage prosecutions have alleged conduct that would benefit the Chinese state, and about 60% of all trade secret theft cases have been connected to China.

The PRC also seeks to dominate key trade routes and infrastructure in Eurasia, Africa, and the Pacific. In the South China Sea, for example, through which about one-third of the world's maritime trade passes, the PRC has asserted expansive and historically dubious claims to nearly the entire waterway, flouted the rulings of international courts, built artificial islands and placed military outposts on them, and harassed its neighbors' ships and fishing boats.

Another ambitious project to spread its power and influence is the PRC's "Belt and Road" infrastructure initiative. Although billed as "foreign aid," in fact these investments appear designed to serve the PRC's strategic interests and domestic economic needs. For example, the PRC has been criticized for loading poor countries up with debt, refusing to renegotiate terms, and then taking control of the infrastructure itself, as it did with the Sri Lankan port of Hambantota in 2017. This is little more than a form of modern-day colonialism.

Just as consequential, however, are the PRC's plans to dominate the world's digital infrastructure through its "Digital Silk Road" initiative. I have previously spoken at length about the grave risks of allowing the world's most powerful dictatorship to build the next generation of global telecommunications networks, known as 5G. Perhaps less widely known are the PRC's efforts to surpass the United States in other cutting-edge fields, like artificial intelligence. Through innovations such as machine learning and big data, artificial intelligence allows machines to mimic human functions, such as recognizing faces, interpreting spoken words, driving vehicles, and playing games of skill, much like chess or the even more complex Chinese game, Go. In 2017, Beijing unveiled its "Next Generation Artificial Intelligence Plan," a blueprint for leading the world in AI by 2030. Whichever nation emerges as the global leader in AI will be best positioned to unlock not only its considerable economic potential, but a range of military applications, such as the use of computer vision to gather intelligence.

The PRC's drive for technological supremacy is complemented by its plan to monopolize rare earth materials, which play a vital role in industries such as consumer electronics, electric vehicles, medical devices, and military hardware. According to the Congressional Research Service, from the 1960s to the 1980s, the United States led the world in rare earth production. "Since then, production has shifted almost entirely to China," in large part due to lower labor costs and lighter economic and environmental regulation.

> The United States is now dangerously dependent on the PRC for these essential materials. Overall, China is America's top supplier, accounting for about 80 percent of our imports. The risks of dependence are real. In 2010, for example, Beijing cut exports of rare earth materials to Japan after an incident involving disputed islands in the East China Sea. The PRC could do the same to us. As China's progress in these critical sectors illustrates, the PRC's predatory economic policies are succeeding. For a hundred years, America was the world's largest manufacturer — allowing us to serve as the world's "arsenal of democracy." China overtook the United States in manufacturing output in 2010. The PRC is now the world's "arsenal of dictatorship."
>
> How did China accomplish all this? No one should underestimate the ingenuity and industry of the Chinese people. At the same time, no one should doubt that America made China's meteoric rise possible. China has reaped enormous benefits from the free flow of American aid and trade. In 1980, Congress granted the PRC most-favored-nation trading status. In the 1990s, American companies strongly supported the PRC's accession to the World Trade Organization and the permanent normalization of trade relations. Today, U.S.-China trade totals about $700 billion.
>
> Last year, Newsweek ran a cover story titled "How America's Biggest Companies Made China Great Again." The article details how China's communist leaders lured American business with the promise of market access, and then, having profited from American investment and know-how, turned increasingly hostile. The PRC used tariffs and quotas to pressure American companies to give up their technology and form joint ventures with Chinese companies. Regulators then discriminated against American firms, using tactics like holding up permits. Yet few companies, even Fortune 500 giants, have been willing to bring a formal trade complaint for fear of angering Beijing.
>
> Just as American companies have become dependent on the Chinese market, the United States as a whole now relies on the PRC for many vital goods and services. The COVID-19 pandemic has shown a spotlight on that dependency. For example, China is the world's largest producer of certain protective equipment, such as face masks and medical gowns. In March, as the pandemic spread around the world, the PRC hoarded the masks for itself, blocking producers — including American companies — from exporting them to other countries that needed them. It then attempted to exploit the shortage for propaganda purposes, shipping limited quantities of often defective equipment and requiring foreign leaders to publicly thank Beijing for these shipments.
>
> China's dominance of the world market for medical goods goes beyond masks and gowns. It has become the United States' largest supplier of medical devices, while at the same time discriminating against American medical companies in China. China's government has targeted foreign firms for greater regulatory scrutiny, instructed Chinese hospitals to buy products made in China, and pressured American firms to build factories in China, where their intellectual property is more vulnerable to theft. As one expert has observed, American medical device manufacturers are effectively "creating their own competitors."
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> America also depends on Chinese supply, Chinese supply chains in other vital sectors, especially pharmaceuticals. America remains the global leader in drug discovery, but China is now the world's largest producer of active pharmaceutical ingredients, known as "APIs." As one Defense Health Agency official noted, "[s]hould China decide to limit or restrict the delivery of APIs to the [United States]," it "could result in severe shortages of pharmaceuticals for both domestic and military uses."
>
> To achieve dominance in pharmaceuticals, China's rulers went to the same playbook they've used to gut other American industries. In 2008, the PRC designated pharmaceutical production as a "high-value-added-industry" and boosted Chinese companies with subsidies and export tax rebates. Meanwhile, the PRC has systematically preyed on American companies. American firms face well-known obstacles in China's health market, including drug approval delays, unfair pricing limitations, IP theft, and counterfeiting.Chinese nationals working as employees at pharma companies have been caught stealing trade secrets both in America and in China. And the CCP has long engaged in cyber-espionage and hacking of U.S. academic medical centers and healthcare companies.

Barr also accused China of waging the equivalent of economic warfare, and he directly accused China's leadership in the process – as well as accused a large portion of American industry as failing to defend American interests:[75]

A centerpiece of this effort is the Chinese Communist Party's "Made in China 2025" initiative, a plan for PRC domination of high-tech industries like robotics, advanced information technology, aviation, and electric vehicles, and many other technologies. Backed by hundreds of billions of dollars in subsidies, this initiative poses a real threat to U.S. technological leadership. Despite World Trade Organization rules prohibiting quotas for domestic output, "Made in China 2025" sets targets for domestic market share (sometimes as high as 70 percent) in core components and basic materials for industries such as robotics and telecommunications. It is clear that the PRC seeks not merely to join the ranks of other advanced industrial economies, but to replace them altogether.

"Made in China 2025" is the latest iteration of the PRC's state-led, mercantilist economic model. For American companies in the global marketplace, free and fair competition with China has long been a fantasy. To tilt the playing field to its advantage, China's communist government has perfected a wide array of predatory and often unlawful tactics: currency manipulation, tariffs, quotas, state-led strategic investment and acquisitions, theft and forced transfer of intellectual property, state subsidies, dumping, cyberattacks, and industrial espionage. About 80% of all federal economic espionage prosecutions have alleged conduct that would benefit the Chinese state, and about 60% of all trade secret theft cases have been connected to China.

The PRC also seeks to dominate key trade routes and infrastructure in Eurasia, Africa, and the Pacific. In the South China Sea, for example, through which about one-third of the world's maritime trade passes, the PRC has asserted expansive and historically dubious claims to nearly the entire waterway, flouted the rulings of international courts, built artificial islands and placed military outposts on them, and harassed its neighbors' ships and fishing boats.

Another ambitious project to spread its power and influence is the PRC's "Belt and Road" infrastructure initiative. Although billed as "foreign aid," in fact these investments appear designed to serve the PRC's strategic interests and domestic economic needs. For example, the PRC has been criticized for loading poor countries up with debt, refusing to renegotiate terms, and then taking control of the infrastructure itself, as it did with the Sri Lankan port of Hambantota in 2017. This is little more than a form of modern-day colonialism.

Just as consequential, however, are the PRC's plans to dominate the world's digital infrastructure through its "Digital Silk Road" initiative. I have previously spoken at length about the grave risks of allowing the world's most powerful dictatorship to build the next generation of global telecommunications networks, known as 5G. Perhaps less widely known are the PRC's efforts to surpass the United States in other cutting-edge fields, like artificial intelligence. Through innovations such as machine learning and big data, artificial intelligence allows machines to mimic human functions, such as recognizing faces, interpreting spoken words, driving vehicles, and playing games of skill, much like chess or the even more complex Chinese game, Go. In 2017, Beijing unveiled its "Next Generation Artificial Intelligence Plan," a blueprint for leading the world in AI by 2030. Whichever nation emerges as the global leader in AI will be best positioned to unlock not only its considerable economic potential, but a range of military applications, such as the use of computer vision to gather intelligence.

The PRC's drive for technological supremacy is complemented by its plan to monopolize rare earth materials, which play a vital role in industries such as consumer electronics, electric vehicles, medical devices, and military hardware. According to the Congressional Research Service, from the 1960s to the 1980s, the United States led the world in rare earth production. "Since then, production has shifted almost entirely to China," in large part due to lower labor costs and lighter economic and environmental regulation.

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…In fact, PRC-linked hackers have targeted American universities and firms in a bid to steal IP related to coronavirus treatments and vaccines, sometimes disrupting the work of our researchers. Having been caught covering up the coronavirus outbreak, Beijing is desperate for a public relations coup, and may hope that it will be able to claim credit for any medical breakthroughs.

…Take Hollywood. Hollywood's actors, producers, and directors pride themselves on celebrating freedom and the human spirit. And every year at the Academy Awards, Americans are lectured about how this country falls short of Hollywood's ideals of social justice. But Hollywood now regularly censors its own movies to appease the Chinese Communist Party, the world's most powerful violator of human rights. This censorship infects not only versions of movies that are released in China, but also many that are shown in American theaters to American audiences.

For example, the hit movie *World War Z* depicts a zombie apocalypse caused by a virus. The original version of the film reportedly contained a scene with characters speculating that the virus may have originated in China. But the studio, Paramount Pictures, reportedly told producers to delete the reference to China in the hope of landing a Chinese distribution deal. The deal never materialized.

In the Marvel Studios blockbuster *Dr. Strange*, filmmakers changed the nationality of a major character known as the "Ancient One," a Tibetan monk in the comic book, changed it from Tibetan to Celtic. When challenged about this, a screenwriter explained that "if you acknowledge that Tibet is a place and that he's Tibetan, you risk alienating one billion people." Or, as the Chinese government might say, "[w]e're not going to show your movie because you decided to get political."

These are just two examples of the many Hollywood films that have been altered, one way or another, to please the CCP. National Security Advisor O'Brien offered even more examples in his remarks. But many more scripts never see the light of day, because writers and producers know not to even test the limits. Chinese government censors don't need to say a word, because Hollywood is doing their work for them. This is a massive propaganda coup for the Chinese Communist Party.

The story of the film industry's submission to the CCP is a familiar one. In the past two decades, China has

…Hollywood is far from alone in kowtowing to the PRC. America's big tech companies have also allowed themselves to become pawns of Chinese influence. In the year 2000, when the United States normalized trade relations with China, President Clinton hailed the new century as one in which "liberty will be spread by cell phone and cable modem." Instead, over the course of the next decade, American companies, such as Cisco, helped the Communist Party build the Great Firewall of China—the world's most sophisticated system for Internet surveillance and censorship.

Over the years, corporations such as Google, Microsoft, Yahoo, and Apple have shown themselves all too willing to collaborate with the CCP. For example, Apple recently removed the news app Quartz from its app store in China, after the Chinese government complained about the coverage of the Hong Kong democracy protests. Apple also removed apps for virtual private networks, which had allowed users to circumvent the Great Firewall, and eliminated pro-democracy songs from its Chinese music store. Meanwhile, the company announced that it would be transferring some of its iCloud data to servers in China, despite concerns that the move would give the Communist Party easier access to e-mails, text messages, and other user information stored in the iCloud.

Recently, we were able to get into two cell phones used by the Al-Qaeda terrorist who shot eight Americans at the Pensacola Naval Air Station. During the gun fight with him, he stopped, disengaged, put his cell phones down and tried to destroy them, shooting a bullet into one of his two cell phones and we thought that suggested that there may be very important information about terrorist activities in those cell phones. And for four and a half months we tried to get in, without any help at all from Apple. Apple failed to give us any help getting into the cell phones. We were ultimately able to get in through a fluke that we will not be able to reproduce in the future, where we found communications with Al-Qaeda operatives in the Middle East up to the day before the attack. Do you think when Apple sells phones in China that Apple phones in China are impervious to penetration by Chinese authorities? They wouldn't be sold if they were impervious to Chinese authorities. And what we've asked for is a warrant – when we have a warrant from a court – that we should be able to get into because cellphones. That's the double standard that has been emerging among American tech companies.

The CCP has long used public threats of retaliation and barred market access to exert influence. More recently, however, the CCP has also stepped up behind-the-scenes efforts to cultivate and coerce American business executives to further its political objectives—efforts that are all the more pernicious because they are largely hidden from public view.

As China's government loses credibility around the world, the Justice Department has seen more and more PRC officials and their proxies reaching out to corporate leaders and inveighing them to favor policies and actions favored by the Chinese Communist Party. Their objective varies, but their pitch is generally the same: the businessperson has economic interests in China, and there is a suggestion that things will go better (or worse) for them depending on their response to the PRC's request. Privately pressuring or courting American corporate leaders to promote policies (or U.S. politicians) presents a significant threat, because hiding behind American voices allows the Chinese government to elevate its influence campaigns and put a "friendly face" on pro-regime policies. The legislator or policymaker who hears from these American businessmen is properly more sympathetic to that constituent than to a foreigner. And by masking its participation in our political process, the PRC avoids accountability for its influence efforts and the public outcry that might result, if its lobbying were exposed.

> America's corporate leaders might not think of themselves as lobbyists. You might think, for example, that cultivating a mutually beneficial relationship is just part of the "guanxi"—or system of influential social networking—necessary to do business with the PRC. But you should be alert to how you might be used, and how your efforts on behalf of a foreign company or government could implicate the Foreign Agents Registration Act. FARA does not prohibit any speech or conduct. But it does require those who are acting as the "agents" of foreign principals to publicly disclose that relationship, and their political or other similar activities, by registering with the Justice Department, allowing the audience to take into account the origin of the speech when evaluating credibility.
>
> By focusing on American business leaders, of course, I don't mean to suggest that they are the only targets of Chinese influence operations in the United States. The Chinese Communist Party also seeks to infiltrate, censor, or co-opt American academic and research institutions. For example, dozens of American universities host Chinese government-funded "Confucius Institutes," which have been accused of pressuring host universities to silence discussion or cancel events on topics considered controversial by Beijing. Universities must stand up for each other; refuse to let the CCP dictate research efforts or suppress diverse voices; support colleagues and students who wish to speak their minds; and consider whether any sacrifice of academic integrity or freedom is worth the price of appeasing the CCP's demands.
>
> In a globalized world, American corporations and universities alike may view themselves as global citizens, rather than American institutions. But they should remember that what allowed them to succeed in the first place was the American free enterprise system, the rule of law, and the security afforded by America's economic, technological, and military strength.
>
> Globalization does not always point in the direction of greater freedom. A world marching to the beat of Communist China's drums will not be a hospitable one for institutions that depend on free markets, free trade, or the free exchange of ideas. There was a time American companies understood this and they saw themselves as American and proudly defended American values.
>
> …American companies must understand the stakes. The Chinese Communist Party thinks in terms of decades and centuries, while we tend to focus on the next quarter's earnings report. But if Disney and other American corporations continue to bow to Beijing, they risk undermining both their own future competitiveness and prosperity, as well as the classical liberal order that has allowed them to thrive.

These are areas where Russia lacks the economic strength to compete with the U.S., and it faces serious limits in competing with many other states. Russia does, however, use its gas exports to gain leverage over Europe, use economic and military aid as the equivalent of weapons, and has used technology transfer selectively to gain strategic leverage.

China as a Hostile State and Illegitimate Regime

Secretary of State Michael Pompeo gave the fourth speech in this series on July 23, 2020. He focused on the broader issue of dealing with Chinese civil and military competition, but he also made broad ideological criticisms of China's leadership and political structure that attacked it as "Marxist-Leninist," and as something approaching the equivalent to Stalinist Russia. He called for major changes in the way the U.S. and its allies competed with China.[76]

> We know that trading with China is not like trading with a normal, law-abiding nation. Beijing threatens international agreements as – treats international suggestions as – or agreements as suggestions, as conduits for global dominance…But by insisting on fair terms, as our trade representative did when he secured our phase one trade deal, we can force China to reckon with its intellectual property theft and policies that harmed American workers.
>
> We know too that doing business with a CCP-backed company is not the same as doing business with, say, a Canadian company. They don't answer to independent boards, and many of them are state-sponsored and so have no need to pursue profits.

> A good example is Huawei. We stopped pretending Huawei is an innocent telecommunications company that's just showing up to make sure you can talk to your friends. We've called it what it is – a true national security threat – and we've taken action accordingly.
>
> We know too that if our companies invest in China, they may wittingly or unwittingly support the Communist Party's gross human rights violations…Our Departments of Treasury and Commerce have thus sanctioned and blacklisted Chinese leaders and entities that are harming and abusing the most basic rights for people all across the world. Several agencies have worked together on a business advisory to make certain our CEOs are informed of how their supply chains are behaving inside of China.
>
> We know too, we know too that not all Chinese students and employees are just normal students and workers that are coming here to make a little bit of money and to garner themselves some knowledge. Too many of them come here to steal our intellectual property and to take this back to their country…The Department of Justice and other agencies have vigorously pursued punishment for these crimes.
>
> We know that the People's Liberation Army is not a normal army, too. Its purpose is to uphold the absolute rule of the Chinese Communist Party elites and expand a Chinese empire, not to protect the Chinese people…And so our Department of Defense has ramped up its efforts, freedom of navigation operations out and throughout the East and South China Seas, and in the Taiwan Strait as well. And we've created a Space Force to help deter China from aggression on that final frontier.
>
> …Just this week, we announced the closure of the Chinese consulate in Houston because it was a hub of spying and intellectual property theft. (Applause.)…We reversed, two weeks ago, eight years of cheek-turning with respect to international law in the South China Sea….We've called on China to conform its nuclear capabilities to the strategic realities of our time…And the State Department – at every level, all across the world – has engaged with our Chinese counterparts simply to demand fairness and reciprocity.

Secretary of State Pompeo also made the most ideological of these four speeches by stating that,

> …we have to admit a hard truth. We must admit a hard truth that should guide us in the years and decades to come, that if we want to have a free 21st century, and not the Chinese century of which Xi Jinping dreams, the old paradigm of blind engagement with China simply won't get it done. We must not continue it and we must not return to it.
>
> …We opened our arms to Chinese citizens, only to see the Chinese Communist Party exploit our free and open society. China sent propagandists into our press conferences, our research centers, our high-schools, our colleges, and even into our PTA meetings…We marginalized our friends in Taiwan, which later blossomed into a vigorous democracy…We gave the Chinese Communist Party and the regime itself special economic treatment, only to see the CCP insist on silence over its human rights abuses as the price of admission for Western companies entering China.
>
> …we have to keep in mind that the CCP regime is a Marxist-Leninist regime. General Secretary Xi Jinping is a true believer in a bankrupt totalitarian ideology. It's this ideology, it's this ideology that informs his decades-long desire for global hegemony of Chinese communism. America can no longer ignore the fundamental political and ideological differences between our countries, just as the CCP has never ignored them.
>
> …the only way to truly change communist China is to act not on the basis of what Chinese leaders say, but how they behave. And you can see American policy responding to this conclusion. President Reagan said that he dealt with the Soviet Union on the basis of "trust but verify." When it comes to the CCP, I say we must distrust and verify.
>
> We, the freedom-loving nations of the world, must induce China to change, just as President Nixon wanted. We must induce China to change in more creative and assertive ways, because Beijing's actions threaten our people and our prosperity.
>
> We must start by changing how our people and our partners perceive the Chinese Communist Party. We have to tell the truth. We can't treat this incarnation of China as a normal country, just like any other.

China's Efforts to Manipulate Territorial Claims

It is worth noting that these four speeches occurred at a time when the U.S. military ships and aircraft were actively confronting China in the South China Sea and near Taiwan, and also when China was putting added pressure on Japan over its claims to the Senkaku Islands. As a result, Secretary Pompeo gave an additional address earlier in July 2020, that addressed a more specific area of Chinese civil competition that had more direct military implications: China's use of civil maritime and air zone claims to gain both civil and military advantages:[77]

> In the South China Sea, we seek to preserve peace and stability, uphold freedom of the seas in a manner consistent with international law, maintain the unimpeded flow of commerce, and oppose any attempt to use coercion or force to settle disputes. We share these deep and abiding interests with our many allies and partners who have long endorsed a rules-based international order.
>
> These shared interests have come under unprecedented threat from the People's Republic of China (PRC). Beijing uses intimidation to undermine the sovereign rights of Southeast Asian coastal states in the South China Sea, bully them out of offshore resources, assert unilateral dominion, and replace international law with "might makes right." Beijing's approach has been clear for years. In 2010, then-PRC Foreign Minister Yang Jiechi told his ASEAN counterparts that "China is a big country and other countries are small countries and that is just a fact." The PRC's predatory world view has no place in the 21st century.
>
> The PRC has no legal grounds to unilaterally impose its will on the region. Beijing has offered no coherent legal basis for its "Nine-Dashed Line" claim in the South China Sea since formally announcing it in 2009. In a unanimous decision on July 12, 2016, an Arbitral Tribunal constituted under the 1982 Law of the Sea Convention – to which the PRC is a state party – rejected the PRC's maritime claims as having no basis in international law. The Tribunal sided squarely with the Philippines, which brought the arbitration case, on almost all claims.
>
> As the United States has previously stated, and as specifically provided in the Convention, the Arbitral Tribunal's decision is final and legally binding on both parties. Today we are aligning the U.S. position on the PRC's maritime claims in the SCS with the Tribunal's decision.
>
> The PRC cannot lawfully assert a maritime claim – including any Exclusive Economic Zone (EEZ) claims derived from Scarborough Reef and the Spratly Islands – vis-a-vis the Philippines in areas that the Tribunal found to be in the Philippines' EEZ or on its continental shelf. Beijing's harassment of Philippine fisheries and offshore energy development within those areas is unlawful, as are any unilateral PRC actions to exploit those resources. In line with the Tribunal's legally binding decision, the PRC has no lawful territorial or maritime claim to Mischief Reef or Second Thomas Shoal, both of which fall fully under the Philippines' sovereign rights and jurisdiction, nor does Beijing have any territorial or maritime claims generated from these features.
>
> As Beijing has failed to put forth a lawful, coherent maritime claim in the South China Sea, the United States rejects any PRC claim to waters beyond a 12-nautical mile territorial sea derived from islands it claims in the Spratly Islands (without prejudice to other states' sovereignty claims over such islands). As such, the United States rejects any PRC maritime claim in the waters surrounding Vanguard Bank (off Vietnam), Luconia Shoals (off Malaysia), waters in Brunei's EEZ, and Natuna Besar (off Indonesia). Any PRC action to harass other states' fishing or hydrocarbon development in these waters – or to carry out such activities unilaterally – is unlawful.
>
> The PRC has no lawful territorial or maritime claim to (or derived from) James Shoal, an entirely submerged feature only 50 nautical miles from Malaysia and some 1,000 nautical miles from China's coast. James Shoal is often cited in PRC propaganda as the "southernmost territory of China." International law is clear: An underwater feature like James Shoal cannot be claimed by any state and is incapable of generating maritime zones. James Shoal (roughly 20 meters below the surface) is not and never was PRC territory, nor can Beijing assert any lawful maritime rights from it.
>
> The world will not allow Beijing to treat the South China Sea as its maritime empire. America stands with our Southeast Asian allies and partners in protecting their sovereign rights to offshore resources, consistent with their rights and obligations under international law. We stand with the international community in

> defense of freedom of the seas and respect for sovereignty and reject any push to impose "might makes right" in the South China Sea or the wider region.

These Chinese efforts affect claims to islands occupied by Japan and other areas including India – claims that have led to both gray area operations and hybrid operations. Russia has been more direct: invading Georgia and the Ukraine by seizing territory with hybrid operations and the use of volunteers in the form of "little green men."

The Problems with the "Four Speech" Approach

Taken together, these speeches call for a major shift in America's strategic position relative to the China. While no speaker referring to the shift from "competition" to "confrontation," and Secretary Pompeo only broadly suggesting that the U.S. seeks a major change in American structure of alliances and the international order, they did all collectively outline what could be the most decisive shift in U.S. strategy since Secretary Marshall announced a U.S. commitment to confronting the Soviet Union on a global basis in 1947.

At the same time, none of the speeches actually addressed the issue of how the U.S. should change its approach to competing with China in practical ways, and none addressed Russia at all. The end result was that they left five key issues that the United States – not simply the current Administration – will now have to address:

- Is this view of China correct, and does it offer the best option for dealing with China in the future?
- Is this view of China one that has bipartisan support in the U.S. and that will endure beyond the coming election?
- The current U.S. national strategy addresses both China and Russia as major competitors, as well as far less serious threats from nations like Iran and North Korea. What is the U.S. position on Russia?
- What changes are required in U.S. strategy and to what extent can the U.S. create global support for its position?
- How do does the U.S. build domestic and international support for a new approach to China, and show that its stance is valid?

In each case, the speeches raised critical challenges, but they did not provide workable answers to any of these questions.

Is this View of China Correct, and Does It Offer the Best Option for Dealing with China in the Future?

Each speech, and the additional speech dealing with the South China Sea, raised valid issues about China's conduct; its approach to economic competition; and its use of espionage, gray area methods, and military actions bordering on hybrid warfare. Each made strong arguments that the United States needed to make major changes in its relations with China and matching changes in its relations with other states to gain their support.

The speeches also, however, took hardline ideological positions that seemed oriented toward a new Cold War. None took account of the world that China has faced in the years since the Opium Wars or of the many other historical reasons for its behavior. They treated China's motives as a product of a communist ideology while ignoring the fact that high levels of state control of China's politics and economy are highly nationalist in character and take place in country that mixes state capitalism with private enterprise. They applied U.S. standards as the equivalent of international

legitimacy and focused on China's real human rights abuses without noting the immense progress that has taken place in reducing poverty and improving civil living standards and opportunities.

The Wray speech, for example, stated that,

> Let us be clear, the Chinese Communist Party is a Marxist-Leninist organization. The Party General Secretary Xi Jinping sees himself as Josef Stalin's successor. In fact, as the journalist and former Australian government official John Garnaut has noted, the Chinese Communist Party is the last "ruling communist party that never split with Stalin, with the partial exception of North Korea." Yes, Stalin – the man whose brutal dictatorship and disastrous policies killed roughly 20 million Russians and others through famine, forced collectivization, executions, and labor camps. As interpreted and practiced by Lenin, Stalin, and Mao, communism is a totalitarian ideology.
>
> Under communism, individuals are merely a means to be used toward the achievement of the ends of the collective nation state. Thus, individuals can be easily sacrificed for the nation state's goals. Individuals do not have inherent value under Marxism-Leninism. They exist to serve the state; the state does not exist to serve them.

This is not a balanced statement of even a Marxist-Leninist ideology, and this view ignores the fact that China's authoritarian character does have real limits and that China's immense Communist Party is more of an instrument of state control than a meaningful ideology. It also ignores the fact that some current Chinese goals – like its claims to the South China Sea – originated under Chiang Kai-shek in response to a long history of outside attacks on China, instead of being solely a product if its "Communist" regime.

Accordingly, valid as the charges about China's conduct were, their sections on ideology were particularly weak and failed to describe the real structure of Chinese government, politics, and motives. Far too many of their comments about ideology apply more to the Former Soviet Union than modern China. Somewhat ironically, the DIA report on *Chinese Military Power* does a better job of describing the structure and character of the Chinese government that these speeches.

If the U.S. is to deal with the issues raised in these speeches, it needs to do a far better job of assessing the structure and nature of the Chinese government and political system, its actions overseas and how other states perceive those actions, and how the U.S. can best compete. The U.S. also needs to very carefully assess the best way to change Chinese behavior, whether opportunities still do exist for cooperation in many areas, and also how the U.S. must change its own behavior to win the support of other states.

Is this View of China One that Has Bipartisan Support and that Will Endure Beyond the Coming Election?

Surveys show deep popular distrust of China in the United States. This is very different, however, from supporting the particular views Secretary Pompeo expressed in terms of U.S. policy goals and from agreeing on any practical course of action. Many who do agree with the charges made about China's conduct will feel that these positions are too strong; discount the ability to negotiate too much; and risk going from competition to open political, economic, and military conflict.

Any consensus that leads to coherent U.S. action in dealing with problems this diverse will have to be built over time on the basis of far more evidence regarding China's behavior, analysis of how it makes decisions and acts, and assessments of the practical ability of to change China's behavior rather than the current sentiment that is presented in these speeches. The timing is also awkward because it is so close to an election, the broad political climate is so partisan, and the many other immediate crises and issues to address.

Building serious bipartisan support for a new approach to China probably can only begin after the election if President Trump is reelected or after the new Administration is elected if Biden becomes President. It will require far more planning and research than these speeches indicate have taken place to date, and it will also need far more debate on the course of action the U.S. should pursue.

The Current U.S. National Strategy Addresses Both China and Russia as Major Competitors. What Should the U.S. position Towards Russia Now Be?

All four of these speeches targeted China without addressing Russia. However, the new U.S. national strategy adopted in 2017 made Russia an equal threat to China. The U.S. is still debating the extent to which Russia has targeted U.S. elections – and Russia has conducted other disinformation, gray area, and hybrid operations hostile to the United States, as well as begun a major nuclear and missile modernization program.

The potential importance of the failure to address Russia was made all too clear after Secretary Pompeo gave his final speech on China. Other statements by a senior Administration official warned that the coming U.S. election was being targeted with disinformation campaigns conducted by China, Russia, and Iran.

The Director of the National Counterintelligence and Security Center (NCSC) , William Evanina, issued a press release on July 24, 2020, stating that "Election security remains a top priority for the Intelligence Community." This release is available from the Office of the Director of National Intelligence, (https://www.dni.gov/index.php/newsroom/press-releases/item/2135-statement-by-ncsc-director-william-evanina-100-days-until-election-2020). The release was relatively short, but it addressed a critical aspect of both Russian and Chinese behavior,

> Today, we see our adversaries seeking to compromise the private communications of U.S. political campaigns, candidates and other political targets. Our adversaries also seek to compromise our election infrastructure, and we continue to monitor malicious cyber actors trying to gain access to U.S. state and federal networks, including those responsible for managing elections. However, the diversity of election systems among the states, multiple checks and redundancies in those systems, and post-election auditing all make it extraordinarily difficult for foreign adversaries to broadly disrupt or change vote tallies without detection.
>
> In addition, foreign nations continue to use influence measures in social and traditional media in an effort to sway U.S. voters' preferences and perspectives, to shift U.S. policies, to increase discord and to undermine confidence in our democratic process. The coronavirus pandemic and recent protests, for instance, continue to serve as fodder for foreign influence and disinformation efforts in America.
>
> At this time, we're primarily concerned with China, Russia and Iran – although other nation states and non-state actors could also do harm to our electoral process. Our insights and judgments will evolve as the election season progresses.

Equally important, an outside report indicates that the NCSC release may have added China and Iran to the list of countries trying to influence the elections, but it failed to fully describe intelligence assessments indicating that the goal of Russia's intervention in the 2016 – and possibly in the upcoming 2020 elections – was to elect Donald Trump as President. Open source material does not provide sufficient evidence to support such a conclusion, but an article by Robert Draper called "Unwanted Truths: Inside Trump's Battles With U.S. Intelligence Agencies," that was printed in the *New York Times Magazine* on August 8, 2020, raises critical questions about the way Russia's actions have been covered and on the political pressure on U.S. intelligence reporting which deserves full public examination.[78]

The U.S. cannot compete with Russia, China, or other states in information "warfare" or disinformation campaigns if the knowledge of their activities is overclassified or manipulated for political purposes. The key to shaping U.S. public opinion and political response, as well as to persuading the governments and peoples of other states, is public exposure in open source reporting to gain public confidence that such reporting is factual and tells the truth.

Overclassification and the failure to report actions by other countries makes over-classification a self-inflicted wound. Failing to report convincingly and objectively denies U.S. credibility and influence. Failing to report because another state attempts to divide the U.S. along political lines – and favor one side of domestic U.S. politics over another – makes every political faction in the U.S. potentially vulnerable to spoiler or divide and conquer tactics. Americans should be educated in order to understand that choosing sides and seeking to divide the U.S. along domestic political lines is the very core of information warfare.

Russia may fall far short of China as an emerging economic power, but it is still a massive nuclear power and poses a major threat to NATO. Its disinformation campaigns as well as its gray zone and hybrid operations pose an ongoing threat to the U.S. and many allies. Its activities in Libya, Syria, and the Ukraine show this threat is both operational and serious. The U.S. cannot focus on China at the expense of Russia or other commitments without carefully assessing the consequences and making major revisions to its overall strategy. The timing will also be awkward because the U.S. must simultaneously deal with the economic impact of the Coronavirus and formulating the FY2021 budget request.

What Changes Are Required in U.S. Strategy and to What Extent Can the U.S. Create Global Support for Its position?

Identifying major challenges is very different from offering credible ways to deal with them. The speeches summarized in this analysis indict China's leadership, government, economic sector, civil sector, and military claims without suggesting any clear strategy for countering the problems they highlight or negotiating some settlement or new relationship with China. They are yet another demonstration of the U.S. government's seemingly unwillingness to understand that a real-world strategy requires a practical course of action, an actual plan to implement it, and the resources required to execute it.

China (and Russia) are not simply a "whole of government" problem, they need a "whole of government solution." It is not clear that the speeches described clearly recognize the extent to which this really requires planning, resources, and implementation.

How Does the U.S. Build International Support for a New Approach to Dealing with China's Position, and Show That Its Stance Is Valid?

The speeches took a major policy stand in ways that certainly attracted China's attention but got minimal visibility even in the U.S., much less to the international community. Moreover, the examples of Chinese conduct citied in the various speeches were made without any backing, white papers, or detail. Many had never been given the same level of official attention or visibility before.

The U.S. has provided detailed official assessments of Chinese military power over the years, but it has never attempted to establish an adequate open source set of reports and evidence to make the full case for the arguments advanced in each speech. There is no ongoing set of official reports

that provide detailed chronologies and evidence to the points about China's methods of economic competition, information warfare, and other largely civil activities – particularly as they apply to Chinese (or Russian) actions in all countries that the U.S. needs to influence.

This reflects a far broader problem within the U.S. government. The U.S. knows how to complain about information warfare and disinformation campaigns, but it does not know how to counter them. It does not attempt to counter malign forms of information warfare by fully and consistently communicating the facts in the many areas where only the government can gather the necessary data.

For example, the U.S. government no longer provides an annual assessment of statistical patterns in terrorism. Its last issue and only report on *Russian Military Power* was issued in 2017. It fails to properly update the CIA *World Factbook*. It fails to require its major combatant commands to issue meaningful open source strategy documents and net assessments. It provides almost no real strategic justification of its annual defense budget requests.

The State Department and USAID budget submissions and web pages are little more than an incoherent strategic mess. And, the U.S. has effectively given up its effort to produce a workable assessment of World Military Expenditures and Arms Transfers (WMEAT). Its recent attempt to revive it as a website is almost a model of how not to structure a functional database.

The annual reports on terrorism no longer have a statistical annex showing the global patterns in terrorism and extremism, and they have never included analyses of state terrorism, extremism, and major abuses of human rights – as distinguished only as weak attempts to describe state support of non-state terrorism. Ironically, its analysis of Iran as a center of world terrorism largely ignores the need to list and describe Iran's action in any detail. As for the intelligence community, the Director of National Intelligence (DNI) did not issue an annual threat assessment for 2020, and the Office of the Director of National Intelligence (ODNI)'s assessments for 2016-2019 provided only passing mentions of some Russian and Chinese activities and intentions without addressing the overall patterns of competition by either power in any detail.[79]

There are exceptions like *Chinese Military Power* and the recent report on Russian disinformation activities discussed earlier, but the U.S. does an appallingly bad job of using declassified information to counter the information warfare and disinformation activities of countries like China and Russia. It has steadily cut back on such reporting over the years, relied heavily on topical short-term public affairs efforts, and now needs to develop a whole new stream of reporting.

Many of the areas involved in assessing China's methods of competing and actions are ones where there is little open source reporting that is not ideological or highly politicized and where gross over-classification is the rule rather than the exception. A narrow focus on the cost of reports adds to the problem because they are perhaps the cheapest weapon available. Competing in these areas means credible transparency – an art form where the U.S. is sadly lacking.

Transitioning from Competition to Civil-Military Confrontation with China without Having a Clear Strategy for Addressing Russia

There are two other aspects of these speeches that should be a subject of deep concern if the U.S. is to act on its words, and gain international support:

First, they indict China's leadership, government, economic sector, civil sector, and military claims without suggesting any clear strategy for either countering the problems they highlight or negotiating some settlement or new relationship with China.

Second, the U.S. must acknowledge that its approach to China is not isolated to its bilateral relationship, but it is also facing the same problems with Russia and even Iran. Instead, the following considerations are needed when creating a strategy:

- China is expanding its influence efforts to shape the policy environment in the United States, pressuring political figures it views as an opposition to China's interests, and countering criticism of China. Beijing recognizes its efforts might affect the presidential race.
- Russia's persistent objective is to weaken the United States and diminish the U.S. global role. Using a range of efforts, including internet trolls and other proxies, Russia continues to spread disinformation in the U.S. that is designed to undermine confidence in our democratic process and denigrate what it sees as an anti-Russian "establishment" in America.

In regard to Russia, if one considers Evanina's statement in the context of the fact there still is no final report on the accuracy of the FBI's investigation in Russia's role in the 2016 election, reports on Russian nuclear and space warfare developments, or reports on Russia's role in British and other foreign disinformation campaigns, then it is clear that the failure to address Russia is a critical omission. This is particularly true given the fact that the new National Security Strategy that the U.S. adopted in 2017, the new National Defense Strategy that the U.S. adopted in 2018, and both the defense budget submissions and the annual threat assessments by the Director of National Intelligence from 2012 to the present have all focused on Russia as well as China.

This need to address both Russia and China is critical. Russia is still sustaining the fighting in the Ukraine; putting steady pressure on NATO, particularly in Russia's border areas; testing anti-satellite systems in space; executing a major nuclear and missile program; developing long-range hypersonic pression strike systems; carrying out gray area and hybrid operations in Syria and Libya; and playing a major role in trying to shape world petroleum prices.

Diplomacy as a Key Tactic to Confront Civil Competition

Finally, the U.S. needs to realize that taking hardline rhetorical positions is not a substitute for diplomacy. The Chinese response to the U.S. illustrates the difference. When the U.S. released the series of four speeches citied earlier, the Chinese Foreign Ministry replied by stating that, [80]

> The current situation between China and the United States is something China does not want to see, and the responsibility rests entirely with the United States. We once again urge the U.S. to immediately revoke the erroneous decision to create necessary conditions for the return of bilateral relations to normal.

The U.S. then followed up these speeches by closing China's consulate in Houston – after determining that the it had facilitated the theft of scientific and technological material. This consulate did recruit people through the Thousand Talents Program, which paid researchers overseas to assist in China's modernization – and used any means including the theft of intellectual property from abroad companies and universities.[81]

In response, China ordered the U.S. to shut its consulate in Chengdu, which had a staff of about 15 American diplomats. These tit for tat actions will not halt China's espionage campaign, but they

may well have acted to restrict the dialogue between the U.S. and China – and even on U.S. capabilities to gather data on China.

Diplomatic maneuvering and strategy are just as important as military and economic maneuvering and strategy, but they should be used to provide benefits, rather than as an attempt to punish. For example, sending the right signals to China can be a key form of diplomacy, especially preceding military action and announcing U.S. posture. When U.S. aircraft carriers Nimitz and Ronald Reagan carried out operations in the South China Sea, the Chinese PLA responded that the American presence was allowed at the pleasure of the Chinese government.[82] Secretary of Defense Esper responded with,

> "I don't know what the Chinese meant by that hollow statement about American carriers being there by the pleasure of the PLA or something. Look, American aircraft carriers have been in the South China Sea in the Indo-Pacific since World War II and we'll continue to be there, and we're not going to be stopped by anybody. We're going to sail, fly and operate where international law allows and we do that, again, to assert international law and rights to back up the sovereignty of our friends and partners and to reassure them that we will be there to defend those things."

The U.S. needs to be careful about using diplomatic meetings productively, rather than as public relations or political visibility exercises. Although Secretary of State Pompeo and China's top diplomatic aide Yang Jiechi did meet in June 2020, little was accomplished during the two-day meeting to deescalate growing hostility between China and the United States.[83] Diplomacy does not equate to concessions, but non-negotiable U.S. conditions can be relayed in multitude of ways that are not simply harsh rhetoric.

It is also critical to offer positive alternatives to confrontation and to make it clear that different political and economic systems can cooperate and coexist. The U.S. has increasingly taken hardline positions – many of which are justified – without providing clear options for cooperation. In some cases the only implied alternative is a total change in the other nation's regime or conduct, and the U.S. has applied sanctions, trade barriers, tariffs, and other punitive measures without presenting credible options. At the same time, the U.S. has threatened its partners with force cuts or withdrawals if they do not support its position by focusing on burden sharing rather than creating more functional and effective partnerships and alliances,

The U.S. does need to promote core values like human rights, democracy, freedom of trade, and international law. At the same time, it needs to recognize that there is no near-term prospect that every country will adopt the U.S. system of government or adopt these values. Nothing it does to improve its capability to compete will allow it to impose its values on an increasingly multipolar world or change many aspects of other governments and regimes. Stable patterns of competition mean cooperation and compromise as well as selected areas of competition and even confrontation. Put bluntly and in the simplest possible terms, the U.S. cannot succeed in competing with a diplomacy that is all sticks and no carrots.

VIII. The Need to Integrate U.S. Military and Civil Strategy and Focus on Global Competition

> "All men can see these tactics whereby I conquer, but what none can see is the strategy out of which victory is evolved...Be extremely subtle, even to the point of formlessness. Be extremely mysterious, even to the point of soundlessness. Thereby you can be the director of the opponent's fate." – Sun Tzu, The Art of War

This analysis has shown that the U.S. needs to revise its strategy to focus at least as much on the use of its military forces in gray area and limited operations by country and region on a global level. It has also shown that competition with China and Russia must be assessed on a civil-military level, and in ways that provide clear assessments of current trends and the requirement for the U.S. to act on grand strategic terms.

This requires transforming a "hole in government" approach for competing with China and Russia into a real "whole of government" approach. It requires major changes in the way the Department of Defense (DoD) now approaches the planning, programming, and budgeting, process (PPB) and in the ways the National Security Council (NSC), the State Department, Homeland Security, and the other civil departments and intelligence operations of the U.S. government now operate. It requires far better classified and open source analysis of all the ways in which China and Russia compete with the United States.

It requires far better analysis of how their leadership and structures of government in China and Russia plan and operate such efforts. Key U.S. intelligence assessments – like the DIA's annual assessment of China's military power – do highlight the critical importance of China's economic growth. There does not seem to be any clear open source literature on how the Chinese and Russian governments plan and operate other than their broad statements about national intentions from those of Xi and Putin.

It also requires far more U.S. attention to the following issues:

Integrating U.S. and Civil Strategy

Developing an effective response to all the forms of Chinese and Russian competition requires a comprehensive rethinking of how the U.S. government operates and what it needs to change to compete more effectively. The United States has never had the same focus on a state-driven exploitation of economic power as that of China and Russia. The U.S. focus on capitalism has tended to drive U.S. economic strategy to rely on making independent market forces as efficient as possible, rather than on setting government-driven strategies and programs for development, technology, and international competition.

This compartmentalization of strategy and the roles of the military and civil side of government has been the American norm. The major exceptions have been World War I, the Great Depression, World War II, and the Great Recession. In all four cases, the U.S. federal government was forced by events to create a more unified approach to national strategy to at least some degree. It also did so to a lesser degree during the Cold War and in dealing with the Former Soviet Union (FSU).

The "Great Recession" in 2008 – the main pre-Coronavirus crisis challenge in the post-Cold War era – did briefly force the U.S. to create a national effort, but the effort focused almost completely on the recovery of the U.S. economy, rather than on politics and social issues instead of any effort to balance domestic civil spending and national security. If anything, the end result of the efforts

to counter the recession was a period of high growth and economic success that focused the U.S. on the market, private sector development, and the growth of the domestic economy.

Focusing Resources on the Right Aspects of Global Competition

The U.S. clearly needs to focus its resources more effectively. As noted earlier, U.S. national security focused largely on the threat posed by terrorism and extremism, and it did so from roughly 2001 to 2017. This had a massive impact on U.S. defense spending and the U.S. economy, as well as on the readiness and structure of U.S. forces – an impact that was combined with the other limits and caps on spending imposed by the Budget Control Act.

As **Chart Thirty** shows, an official Department of Defense (DoD) estimate of the direct military cost of the U.S. engagement in Afghanistan and Iraq from FY2001-FY2019 involved total obligations of over $1.8 billion, and this chart does not include the costs of State Department, USAID, CIA, or other civil department and agency spending. Actual direct spending came close to $2 trillion by the end of FY2019, and the proposed Department of Defense budget for FY2021 indicates the Department requested $66 billion more in FY2020 and $53 billion more in FY2021.[84]

NGO estimates can be much higher. The Watson Institute at Brown University puts total military spending on Overseas Contingency Costs (OCO) at $1,959 billion during FY2001-FY2020, and it adds $131 billion in State Department costs; $8083 billion for added costs to the rest of the Defense budget; $926 billion in federal interest payments; $437 billion in Veteran's care; and $1,054 billion for Homeland security.[85] These costs go far beyond any normal way of counting federal expenditures, but both their analysis and the DoD's analysis compared to the amount of some $3.7 trillion in U.S. spending on the Coronavirus crisis as of May 10, 2020.

The net strategic impact of the Afghan and Iraq wars is still uncertain, but they have had an immense cost in lives and dollars. It is all too clear that they were each conducted without a consistent strategy and little regard for strategic competition. The U.S. became involved in two decades of combat in Afghanistan – in a country where Russia, China, Iran, and Pakistan also have major strategic interests in Afghanistan's stability. The grand strategic need for a U.S. commitment of the kind that the U.S. made is dubious at best, and the current peace efforts offer little hope of lasting stability for Afghanistan. The net regional impact has resulted in pushing Pakistan closer to China and easing regional pressure on both China and Russia.

The strategic impact of the invasion in Iraq for the wrong reasons have been equally uncertain. It has greatly increased Iran's relative military position in the Middle East and its influence in Iraq and the Levant. The U.S. failure to act decisively in Syria opened it up to a major Russian presence and increase in regional influence. The net strategic benefits to the U.S. will only exceed the net strategic benefits to Russia if the U.S. can establish a lasting and stable relationship with Iraq.

More broadly, the lack of any consistent U.S. approach to the region and to competition with Russia has produced at least some impact on Russia's actions in the Ukraine, its growing influence in Turkey, its arms sales to Iran, and its destabilizing role in Libya; as well as an impact China's decisions to increase its presence in the Red Sea and Djibouti.

Words Alone Are Not a Strategy

Throughout this study, it has become all too clear that the U.S. confuses stating goals and intentions with having an actual strategy. The changes in the U.S. strategy in 2017 have led the United States to increasingly focus on Chinese and Russian military forces, but it is far from clear that they have

had a positive effect in dealing with these critical real-world challenges. The U.S. has not demonstrated that it can effectively tie is regional strategies to its strategies for competing with China and Russia. This will be even more critical in the world that will emerge from the Coronavirus crisis. Nation after nation will have major new stability problems as a result of the economic cost of the crisis, and they will be more vulnerable to outside investments and to spoiler operations by China and Russia. Nature may abhor a vacuum, but power exploits one.

The U.S. has also largely separated its military and economic efforts in dealing with each state, and it has largely decoupled its strategy for fighting its current wars from this competition. The U.S. has talked about rebalancing U.S. strategy and military forces to deal with China's emerging military power, but it has focused separately on trade issues in dealing with China's economic rise.

The U.S. did react to Russia's increased military pressure once Russia seized Crimea and sent "little green men" into the Ukraine in late February 2014, and the U.S. also did combine economic sanctions and a shift back to a concern with NATO, but its strategic focus on Russia has been relatively narrow and is still short term.

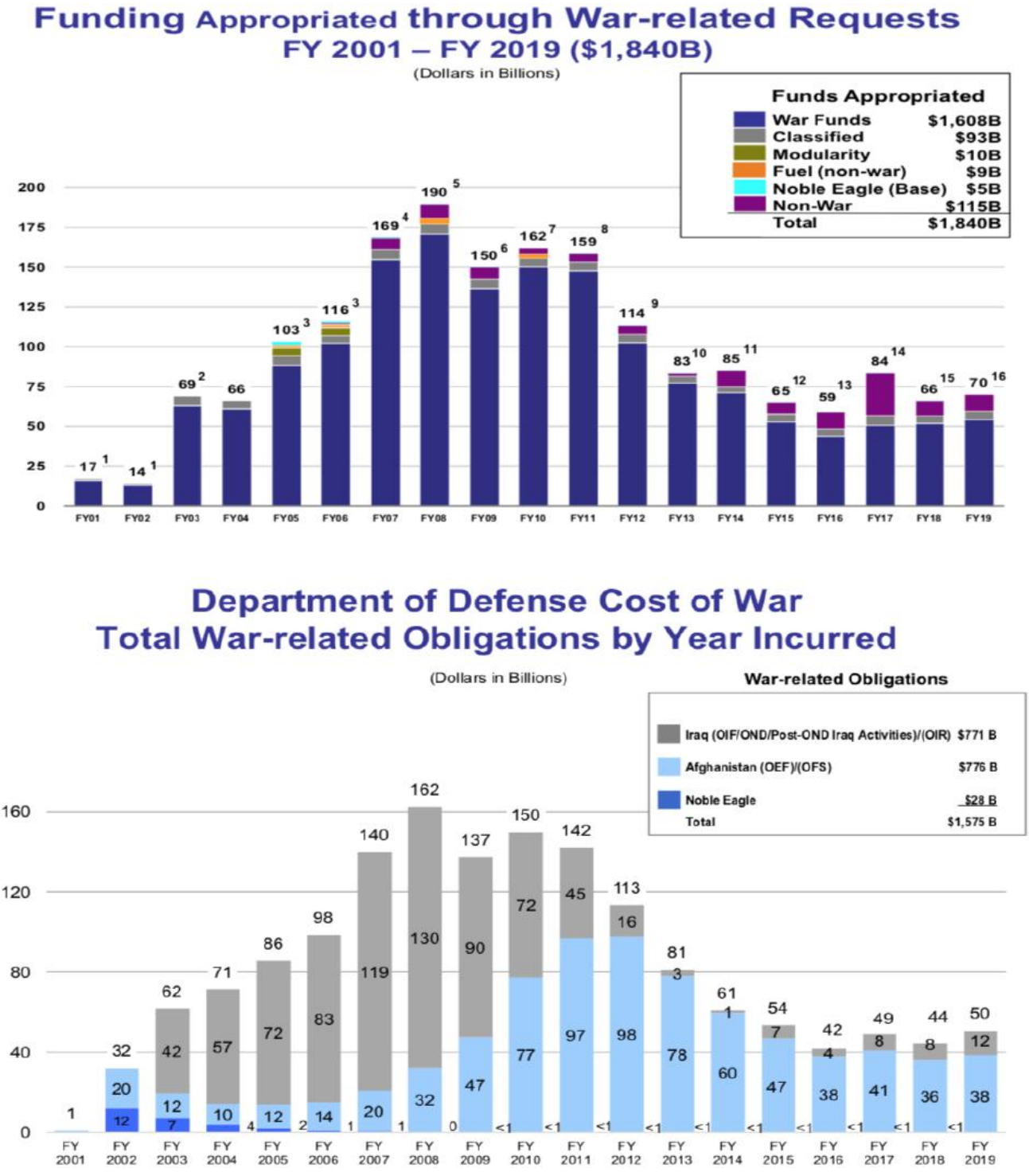
At the same time, for all the alarms this analysis raises about Chinese and Russian capabilities in gray zone operations, Russia and China have their own vulnerabilities, which the United States must exploit. For example, China's Belt and Road Initiative often provides loans or projects that exploit the country involved, providing an opportunity for a U.S. response. These include a wide range of Chinese deals with African and Asian nations, that are outlined in the **Chinese Chronology**, that may provide leverage in one country or area but provoke anger in other states.

Russia is attempting to claim a role as an international mediator, but by doing so, it has taken on the difficult task of appeasing both its Syrian and Turkish relations in a volatile war in Syria. Russia cannot operate in the Balkans, export gas, attempt to manipulate world energy prices, carry out information warfare, or interfere in foreign elections without provoking other states, thereby offering the United States an opportunity to strengthen U.S. strategic partnerships and take countermeasures.

The U.S. has the advantage when it comes to having strategic partners and operating in free markets. It does not have to imitate Chinese and Russian gray zone tactics, and it can often take advantage of its already existing military strengths, allied partnerships, and development programs. Arguably, most nations would rather work with a willing U.S. than a less capable Russia or China, but it is clear that some countries have accepted to partner with the "next best thing" after observing an increasingly neo-isolationist United States.

At the same time, the United States should actively counter aggressive Chinese or Russian gray zone operations. For example, the U.S. should actively resist Chinese aggression in the South China Sea and Russian intimidation in Europe and Central Asia where U.S. allies or interests are threatened. It should also assign a high priority to recognizing and identifying gray zone operations, which sometimes can be concealed as harmless forms of competition. However, it is clear that the U.S. is losing significant status as a global competitor by turning a blind eye to acts of gray zone operations.

Chart Thirty: Department of Defense Cost of War Report as of September 30, 2019: FY2001-FY2020



Source: Department of Defense, "FY 2019 Quarter 4 Cost of War Update as of September 30, 2019," September 30, 2019, https://fas.org/man/eprint/cow/fy2019q4.pdf

The Role of Cooperation amidst Great Power Competition

The U.S. must not let competition become a hardline form of confrontation. Great power competition and cooperation are not mutually exclusive. With the nature of gray zone and hybrid "warfare" not operating in a clear state of war, the United States will need to engage in both competition and cooperation in order to assert and keep its influence.

In 2018, the Joint Chiefs of Staff released the *Joint Concept for Integrated Campaigning*, which defines the current operating space in three states of relations:

1. In *armed conflict*, the use of violence is the primary means by which an actor seeks to satisfy its interests. Armed conflict varies in intensity and ranges from limited warfare to major wars between great powers.
2. *Competition* below armed conflict exists when two or more actors in the international system have incompatible interests but neither seeks to escalate to armed conflict. The Joint Force will have a great deal of utility in securing strategic objectives in competition, but it will typically offer support to other USG departments and actors.
3. *Cooperation* includes mutually beneficial relationships between strategic actors with similar or compatible interests. Although interests will only rarely be in complete alignment, relations that are fundamentally cooperative are strategically important for the United States because they underpin the international order, enhance collective security, help to ensure access, enable burden-sharing, and deter conflict.

The U.S. is increasingly focusing its efforts on competition, and it is neglecting the opportunities provided by cooperation with Russia and China. Not only does the current U.S.-China trade war severely undermine the global economy, but it severs China's dependence on U.S. industries and supports China's growing relationship with third parties like Russia or the Gulf countries. The U.S. also recently announced it would leave the Open Skies Treaty (OST), thereby cutting off another channel of communication with Russia.

The U.S. can simultaneously carry out competition and cooperation in ways that both reduce an escalation of conflict and assert U.S. priorities. Against China's growing maritime power, the U.S. can renounce the development of artificial islands in the South China Sea while also partnering with Chinese counter-piracy operations in the Indian Ocean. The U.S. can enhance its competition with Russia's nuclear development program by cooperating with Moscow to enact the New START accord.

Looking Beyond Competition with China and Russia

The U.S. does face major challenges from China and Russia**. Chart Thirty-One** helps put the differences of this competition between the world's major military powers into a broader, and more global perspective. The data are subject to all of the same types of problems in data collection, definition, and methodology cited earlier, but it is still clear that the only area where the U.S., China, and Russia truly dominate global activity is in their holdings of nuclear weapons – in which the estimates shown indicate that they hold 81.2% of deployed weapons and 93.8% of all nuclear weapons.

The U.S., China, and Russia only account for 42% of the estimates shown for the world's GNI and only 24.2% of the world's total population, although the three major powers do account for 56% of the IISS estimate of the world's defense budgets and 55% of the SIPRI estimates of the world's total defense spending.

Yet, America's strategic partnership and relations with other states are as critical to shaping successful military, economic, and civil competition as any direct challenges to China and Russia.

The United States has major current advantages when competition is judged at the global level, rather than on a power to power basis, but only *if* the U.S. acts to preserve these advantages and deal with the massive global impacts of the Coronavirus.

The U.S. has a wide range of allies and trading partners, and far stronger networks of alliances than China and Russia. These are reflected in the structure of its combatant commands and every aspect of its trade, economy, and diplomatic relations. These partnerships with other states are not – as U.S. actions have recently tended to assume – transactional burdens. They offer major strategic advantages and further reasons to look beyond designing U.S. forces to deal directly with the potential threat from Russia and China.

Even broad comparisons of military spending illustrate the importance of partners and allies. To put such burden sharing efforts in real world perspective, the International Institute of Strategic Studies (IISS) estimates that Russia had a defense budget of $48.2 billion in 2019 and defense expenditures of $61.6 billion.[86] These figures are not directly comparable to NATO official figures, but they still provide a good indication of the relative size of Russian and NATO efforts.

If one uses the $61.6 billion total figure for Russian military spending with NATO estimates that the U.S. spending alone was $730.1 billion in current 2019 $US, then the U.S. spending was 11.9 times higher than the IISS figure for Russia's spending. This makes it a far better case for examining the comparative allocation of resources – and the effectiveness of such spending on each side – than just asking for more money for the U.S. defense budget.

NATO Europe also compares remarkably well with Russia. NATO reports that its European members spent $284.0 billion on defense in current dollars in 2019. This was 4.6 times more than total Russian spending. It is also worth pointing out that Germany alone spent $54.1 billion (88% of the Russian total), France spent $50.7 billion (82% of the Russian total), and the U.K. spent $60.7 billion (99% of the Russian total). And, if Canada is included among our allies, the total comes to $305.9 billion or 5.0 times more than Russia.

The official NATO estimate of total spending in 2019 was $984.2 billion or 16.0 times higher than Russia's spending.[87] Russia has no meaningful strategic partners in terms of military spending.[88] The closest thing Russia has to a direct ally is Belarus, which only spent $.136 billion on military forces in 2019. Given these figures, the value of our NATO strategic partners becomes far more clear, and the priority for effective force planning again is obviously far greater than meeting arbitrary percentage of GDP goals for burden sharing.

When it comes to total economic resources, the issue is equally clear. The NATO estimate of the size of each member country's economy or GDP is reported in constant dollars and uses a metric called "Real GDP" based upon 2015 prices and exchange rates. It estimates in 2019, the U.S. GDP was $20.004 trillion and the GDP of its NATO European allies was $17.568 trillion – raising the U.S. total to $37.572 trillion or by 88%.[89] The IISS puts Russia's GDP in 2019 at only $1.64 trillion – a little over 4% of the total NATO GDP of $39.243 trillion and 9.3% of the NATO European total.[90] Belarus only had a GDP of $62.6 billion.

And the dollar value of strategic partners is scarcely confined to Europe. The figures for Asia are less clear because there are no equivalent official sources of comparable data as there is for NATO. The IISS estimates, however, show that in 2019, key strategic partners like Australia spent $25.5 billion on defense, Japan spent $48.5 billion, South Korea spent $38.8 billion, New Zealand spent $2.7 billion, Singapore spent $11.3 billion, and Thailand spent $7.1 billion. Defense spending by

these U.S. strategic partners totals to $133.9 billion, and this compares with an IISS estimate of $181.1 billion for China.

Two other key powers that have security issues with China include India ($60.5 billion) and Vietnam ($5.2 billion). If they are added to the total, China faced other Asian states that spent $199.6 billion compared to $181.1 billion for China. And the IISS estimates that China only accounted for 42% of all Asian defense spending in 2019.[91] Even allowing for Chinese underreporting of its military spending – and other estimates for China that go as high as $250 billion a year – these strategic partner spending levels are still very significant figures.

The figures for the Middle East show the same trends. In 2019, key strategic partners like Bahrain spent $1.5 billion, Egypt spent $3.4 billion, Israel spent $19.7 billion, Jordan spent $1.7 billion, Kuwait spent $6.4 billion, Morocco spent $3.6 billion, and Saudi Arabia spent $78.4 billion. Two other key partners with high spending levels – Qatar and the UAE –- did not report, but this still produces a total of $114.7 billion. Iraq – which may become a U.S. partner – spent another $20.5 billion. This compares with $17.4 billion for a hostile Iran.[92]

To put it simply, the U.S. is far better off working with its allies and other states – particularly in view of the Coronavirus crisis – than it is by ignoring them, by alienating them through burden sharing bullying, by arbitrarily cutting the forces the U.S. deploys, or by dropping out of treaties and regional agreements like the Trans-Pacific Partnership (TPP) Agreement.

Chart Thirty-One: U.S., China, and Russia Compared to the World in 2019

Category	U.S.		China		Russia		World
	Value	%of World	Value	%of World	Value	%of World	Total
Nuclear Weapons							
Retired	**2060**	**52%.**	**-**	**NA**	**2,000**	**49%**	**4,060**
Stockpiled	**4,310**	**53%**	**-**	**-**	**3,800**	**47%**	**8,110**
Deployed	**1,572**	**35%**	**320**	**7.2%**	**1,750**	**39%**	**4,442**
Total [a]	**6,370**	**48%**	**320**	**2.4%**	**5,800**	**43%**	**13,410**
Defense Budget							
IISS	**684.6**	**40%**	**181.2**	**10.5%**	**48.2**	**2.8%**	**1,732.2**
Defense Spending							
SIPRI	**731.8**	**38%**	**261.1**	**13.6%**	**65.1**	**3.4%**	**1,917.0**
GDP							
$US current Trillions	**20,554**	**23.9%**	**13,698**	**15.9%**	**1.658**	**1.9%**	**85,910**
Population							
Millions	**332.6**	**4.3%**	**1,394.0**	**18.1%**	**141.7**	**1.8%**	**7684.3**

[a] Adds France (290), UK (195), Pakistan (160), India (150), Israel (90), and DPRK (35).

Source: Hans M. Kristensen and Matt Korda, "Status of World Nuclear Forces" https://fas.org/wp-content/uploads/2020/04/WarheadInventories2020-1.jpg; IISS "Defense budget data," *Military Balance, 2020*, pp. 529-530.; SIPRI, "Military Expenditure in Current $US millions," SIPRI Military Expenditure Database; SIPRI "Fact Sheet April 2020: Trends in world military expenditure," April 27, 2020.; World Bank, "GDP (current US$)" https://data.worldbank.org/indicator/NY.GDP.MKTP.CD; CIA *World Factbook*, Country Sections, https://www.cia.gov/library/publications/the-world-factbook/

Five Critical Priorities for Strategic Competition

If the United States is to develop a more effective approach to national security strategy, it needs to look beyond the need to focus on military competition.

It needs to focus on all gray area civil and military operations and to develop suitable strategies for each country and region by using its major combatant commands. It needs to give the right priority to the abilities of the functional commands to support such operations – including the Strategic and Space Commands to provide mutual assured deterrence (MAD).

It needs to focus on building and strengthening strategic partnerships in ways that look far beyond the narrow area of direct U.S. competition with China and Russia. It needs to seek a broad allied recovery from the Coronavirus crisis as a key strategic objective and to find ways to work with its strategic partners and allies to contain and deter Chinese and Russian competitive efforts and push them towards global cooperation where possible.

The U.S. needs to focus on all Chinese and Russian use of all civil, military, and economic gray zone tactics and their accumulating impact on a given strategic interest. The U.S. cannot ignore the destabilizing activities of Russian and Chinese gray zone operations due to its own compartmentalization of civil, economic, and military actions.

Above all, the U.S. needs to focus on military, civil, and economic competition in order to develop integrated strategy based on net assessments that address all areas of competition together. The U.S. needs to respond by directly comparing its capabilities to deter, conduct gray area and lower-level military operations, and provide economic growth and development.

Many aspects of such efforts have to be classified, but a primary emphasis should be placed on open source reporting, revealing areas where competition is illicit or covert, exposing Chinese and Russian official and covert activities by name, citing the use of third countries and non-state actors, and showing the history and patterns in such activities. Public information is the key to building an understanding of these threats posed by such forms of competition, recognizing the need to counter them, and growing an awareness that using information is a weapon in countering disinformation.

Finally, the United States needs to take a real whole of government approach to making joint military and economic assessments in the ways similar to which China, Russia, and other states compete with the United States and its strategic partners. These are not priorities the U.S. can ignore because of the Coronavirus crisis. If anything, the crisis makes them far more urgent.

The issues in the U.S. strategy and the present U.S. planning, programming, and budgeting process (PPB) are addressed in more detail in four other Burke Chair studies:

- ***The FY2021 U.S. Defense Budget Request: A Dysfunctional Set of Strategic Blunders***, February 13, 2020, https://www.csis.org/analysis/fy2021-us-defense-budget-request-dysfunctional-set-strategic-blunders.

- ***America's FY2020 Defense Strategy and Programming Crisis***, November 13, 2018, https://www.csis.org/analysis/americas-fy2020-defense-strategy-and-programming-crisis

- ***China and the U.S.: Cooperation, Competition and/or Conflict: An Experimental Assessment,*** October 1, 2019, https://www.csis.org/analysis/china-and-united-states-cooperation-competition-andor-conflict.

- ***China and the New Strategic Nuclear Arms Race: The Forces Driving the Creation of New Chinese Nuclear Delivery Systems, Nuclear Weapons, and Strategy,*** November 15, 2018, https://www.csis.org/analysis/china-and-new-strategic-nuclear-arms-race.

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英语类：四六级万词班专四专八雅思等
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全国翻译专业资格考试备考资料	BEC 初级+中级+高级全套备考资料	大数据学习资料
SPSS 自学必备教程	Origin 自学必备教程	会计实操资料
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